A Critical Examination of the Coherence-Based Genealogical Method in New Testament Textual Criticism

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A Critical Examination of the Coherence-Based Genealogical Method in New Testament Textual Criticism

By

Peter J. Gurry

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Non nobis Domine

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Abbreviations

ANTF	Arbeiten zur neutestamentlichen Textforschung
BDAG	Walter Bauer, Frederick W. Danker, W.F. Arndt, and F.W. Gingrich, eds., *A Greek-English Lexicon of the New Testament and Other Early Christian Literature*, 3rd ed. (Chicago: University of Chicago, 2000)
BHGNT	Baylor Handbook on the Greek New Testament
CBGM	Coherence-Based Genealogical Method
ECM	*Editio Critica Maior*
ECM IV/1.1	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 1: Text: Installment 1: James* (Stuttgart: Deutsche Bibelgesellschaft, 1997)
ECM IV/1.2	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 1: Text: Installment 2: The Letters of Peter* (Stuttgart: Deutsche Bibelgesellschaft, 2000)
ECM IV/1.3	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 1: Text: Installment 3: The First Letter of John* (Stuttgart: Deutsche Bibelgesellschaft, 2003)
ECM IV/1.4	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 1: Text: Installment 4: The Second and Third Letter of John, the Letter of Jude* (Stuttgart: Deutsche Bibelgesellschaft, 2005)
ECM IV/2.1	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 2: Supplementary Material: Installment 1: James* (Stuttgart: Deutsche Bibelgesellschaft, 1997)
ECM IV/2.2	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 2: Supplementary Material: Installment 2: The Letters of Peter* (Stuttgart: Deutsche Bibelgesellschaft, 2000)
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ECM IV/2.4	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 2: Supplementary Material: Installment 4: The Second and Third Letter of John, the Letter of Jude* (Stuttgart: Deutsche Bibelgesellschaft, 2005)
ECM2	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 1: Text*, 2nd ed. (Stuttgart: Deutsche Bibelgesellschaft, 2013)

ECM2:Supp	Barbara Aland et al., eds., *Novum Testamentum Graecum: Editio Critica Maior IV: Catholic Letters: Part 2: Supplementary Material*, 2nd ed. (Stuttgart: Deutsche Bibelgesellschaft, 2013)
EDV	Elektronische Datenverarbeitung
IGNTP	International Greek New Testament Project
INTF	Institut für Neutestamentliche Textforschung
HTR	*Harvard Theological Review*
JBL	*Journal of Biblical Literature*
JETS	*Journal of the Evangelical Theological Society*
JSNT	*Journal for the Study of the New Testament*
JSHJ	*Journal for the Study of the Historical Jesus*
JTS	*Journal of Theological Studies*
MS(S)	Manuscript(s)
NA27	Barbara and Kurt Aland et al., eds., *Novum Testamentum Graece*, 27th ed. (Stuttgart: Deutsche Bibelgesellschaft, 1993)
NA28	Barbara Aland et al., eds., *Novum Testamentum Graece*, 28th ed. (Stuttgart: Deutsche Bibelgesellschaft, 2012)
NovT	*Novum Testamentum*
NTTS	New Testament Tools and Studies
NTTSD	New Testament Tools, Studies, and Documents
NTL	New Testament Library
NTS	*New Testament Studies*
NT.VMR	New Testament Virtual Manuscript Room
RBL	*Review of Biblical Literature*
SBL	Society of Biblical Literature
SNTS	Studiorum Novi Testamenti Societas
SD	Studies and Documents
TC	*Textual Criticism: A Journal of Biblical Textual Criticism*
ThLZ	*Theologische Literaturzeitung*
TrinJ	*Trinity Journal*
TynB	*Tyndale Bulletin*
UBS5	Barbara Aland et al., eds., *The Greek New Testament*, 5th ed. (Stuttgart: Deutsche Bibelgesellschaft/United Bible Societies, 2014)
WUNT	Wissenschaftliche Untersuchungen zum Neuen Testament

Introduction

1 Rationale

This book provides a sustained study of the Coherence-Based Genealogical Method (CBGM), a computerized tool for editing the text of the Greek New Testament. As a database-driven method, the CBGM combines textual agreement with an editor's own textual decisions to extract genealogy from traditions that have suffered from heavy contamination. The method was designed specifically for the Greek New Testament by Gerd Mink at the Institut für Neutestamentliche Textforschung (INTF) in Münster, Germany, and it has been described as "a major breakthrough" and "an exciting and stimulating development."[1] Its foundational principle is said to be "an essentially simple but brilliant stroke."[2] Michael Holmes, himself an editor of the Greek New Testament, hopes that the method can help editors and textual critics grasp the larger implications of their often atomistic decisions while David Parker, who is currently editing John, believes that the CBGM has finally resolved the longstanding problem of contamination.[3] Even Eldon Epp, who has reservations about the method, admits that it "holds much promise for showing the genealogical relationships of readings in individual variation units and also for creating a global stemma."[4]

Although the CBGM has been applied in various degrees to a few other textual traditions,[5] its main use has been on the New Testament where its key

1 Tommy Wasserman, "Criteria for Evaluating Readings in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 607; Scott Charlesworth, "Review of *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*," *TC* 18 (2013): §15.

2 David C. Parker, *An Introduction to the New Testament Manuscripts and Their Texts* (Cambridge: Cambridge University Press, 2008), 169.

3 Michael W. Holmes, "Working with an Open Textual Tradition: Challenges in Theory and Practice," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 78; David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 84, 91.

4 Eldon J. Epp, "Textual Clusters: Their Past and Future in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 549.

5 See Jochem Kahl, *Siut-Theben: Zur Wertschätzung von Traditionen im alten Ägypten* (Leiden:

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aspects have already become "indispensable tools" for the editors of the *Editio Critica Maior* (ECM),[6] the text of which is being adopted by the most widely-used critical editions of the Greek New Testament.[7] For these editors, the CBGM has led to a number of significant changes including a greater appreciation for the Byzantine text, over a dozen changes in the manuscripts consistently cited for the Catholic Epistles, and the rejection of most text-types. At the time of writing, the CBGM is being applied to the text of Acts with John, Revelation, and Mark to follow next. Over time, the method will be applied to the entire text of the Greek New Testament. In this way, the CBGM will have its influence on all who study, preach, teach, and translate the Greek New Testament—whether they know it or not.

Despite the excitement about the CBGM and its adoption by such prominent editions, there has been no sustained attempt to critically test its principles and procedures.[8] A number of factors contribute to this situation. One is the method's complexity. The explanations of it are often dense and demanding. The other is the fact that scholars have not been able to use it with their own text-critical decisions. With the exception of this study, it has only been used for the New Testament by the editors of the ECM. Nevertheless, the results of the CBGM and a number of tools for exploring them have been available electronically since 2008.[9] In addition, the ECM2, which used the method throughout, was published in 2013. As J.K. Elliott wrote at that time, "We have our chance now to assess its effectiveness as a text critic's tool in practice."[10] What follows is an attempt to do just that.

Brill, 1999), 43–52; Alberto Cantera, "Building Trees: Genealogical Relations between the Manuscripts of Wīdēwdād," in *The Transmission of the Avesta*, ed. Alberto Cantera, Iranica 20 (Wiesbaden: Harrassowitz, 2012), 279–346.

6 ECM IV/1.4, 37*.

7 NA28, 48*; UBS5, 1*, 2*–4*.

8 The largest study published to date is a chapter in Bengt Alexanderson, *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method* (*CBGM*) *and the Editio Critica Maior* (*ECM*), Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014).

9 These are online at http://intf.uni-muenster.de/cbgm/en.html.

10 J.K. Elliott, "Review of *Novum Testamentum Graecum: Editio Critica Maior* (2nd Edition)," *JTS* 64, no. 2 (2013): 637.

2 Scope

Given that, at the time of writing, the results of the CBGM were only available for the Catholic Epistles, these letters set the limits of the present investigation. Some may wonder whether this corpus is the best place to study the CBGM given its minor role in the history of the discipline. It is true that text-types, for example, have not been as prominent in the textual criticism of the Catholic Epistles as they have been elsewhere, especially in the Gospels.[11] Nevertheless, it is sometimes forgotten that the Greek manuscript evidence for the Catholic Epistles is greater than in Revelation and roughly the same as in both Acts and the Pauline corpus. In fact, The ECM started with the Catholic Epistles because that was where data were most readily available for the versional and patristic evidence at the time it was planned.[12] This means that there is ample data on which to base the present study.

My own work has been aided by two trips to Münster to discuss the method, one at the beginning of my research in January of 2014 and another in January of 2016. The staff there, and Klaus Wachtel and Gerd Mink in particular, have been especially helpful in answering queries and providing additional data when needed. This included my own private installation of the CBGM software that was used extensively for the present research. For the benefit of my readers, I have made this edition of the CBGM publicly available at http://intf.uni-muenster.de/gurry with their agreement. Furthermore, since certain figures had to be reduced for printing, the reader will find full-size images at https://doi.org/10.6084/m9.figshare.5245243 along with one additional dataset referenced in what follows.

Aside from my own version of the CBGM, the materials used are almost always the second editions of both the ECM and CBGM which developed in tandem over the last thirty years.[13] The precise relationship between these will be discussed in more detail in what follows, but suffice it to say now that, except where indicated, the reader can assume that the data discussed are taken from these second editions. This is because these are the most mature forms of each and because the adoption of the ECM2's text in the NA28 and UBS5 ensures that it has received far wider circulation.

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11 For a helpful discussion, see Parker, *Introduction*, 283–310.

12 Kurt Aland, "Novi Testamenti Graeci Editio Maior Critica: Der gegenwärtige Stand der Arbeit an einer neuen grossen kritischen Ausgabe des Neuen Testamentes," *NTS* 16, no. 2 (1970): 166.

13 For a discussion of the revision and a list of changes to the initial text, see the ECM2, 30*–38*. Both editions of the CBGM can be accessed at http://intf.uni-muenster.de/cbgm/en.html.

Finally, a word about what this study is not. In the first case, although there are occasional references to other genealogical methods, this is not a sustained comparison of the CBGM to other methods.[14] Such a study has its value, but it seemed to the present writer that the CBGM should be understood on its own merits before comparing it to competing methods. Secondly, this is not a study of the CBGM's challenge to the notion of text-types, significant as that is. No doubt, the editors' views about text-types promise (or threaten, depending on one's view) to be one of the method's most far-reaching effects,[15] but, in our view, such a study is better undertaken in those parts of the New Testament where text-types have played a more significant role in the history of the discipline such as the Gospels and Acts. Finally, in an effort to forestall disappointment, the reader will not find here anything approaching a critical commentary on the text produced by the CBGM. As late as 2005, the promise of an accompanying commentary was still being printed in the introduction to the ECM2. The appearance of such would have been especially valuable to this research. But, at this point, hope for such a volume is probably best abandoned.[16] In the absence of such a commentary and given that the CBGM remains a tool that must be plied by the editors, it seemed best to focus on the method itself as much as possible rather than the editors' particular use of it. If the method is fundamentally flawed, it matters little how well they used it. Of course, readers will quickly realize that theory and practice can only be separated so far. But, as much as possible, my focus has been drawn again and again to the method's basic principles more than to the application of them in any given instance.

3 A Note on Terms and Percentages

As will become clear in what follows, the CBGM distinguishes the text of a manuscript from the artifact itself and further distinguishes "logically and grammatically possible" readings from those that are not. I have generally tried

14 For a short study of this type, see Matthew Spencer, Klaus Wachtel, and Christopher J. Howe, "The Greek Vorlage of the Syra Harclensis: A Comparative Study on Method in Exploring Textual Genealogy," *TC* 7 (2002), http://rosetta.reltech.org/TC/v07/SWH2002/.

15 For a response to the CBGM's challenge to text-types, see Epp, "Textual Clusters."

16 As something of a substitute, readers may be interested in the catalogue of variants discussed in relation to the CBGM provided in the appendix to Peter J. Gurry, "How Your Greek New Testament Is Changing: A Simple Introduction to the Coherence-Based Genealogical Method (CBGM)," *JETS* 59, no. 4 (2016): 686–689.

to follow the CBGM in using the term "witness" to refer to the text and the term "manuscript" to refer to the material artifact. In some cases, the term "witness" has been used more broadly to refer to various types of evidence such as versions and church fathers. Such uses should be patent. On the other hand, I have not typically followed the CBGM's distinction between "variant" and "reading" wherein only the former is grammatically and logically possible. Instead, as with many other text critics, I have used the terms interchangeably except where necessary. In such cases the distinction will be indicated.

Secondly, references to specific variants or variant units follow the ECM's system of dividing not only chapters and verses, but also words. Chapter and verse divisions are obvious, of course, but the word divisions may need explanation. The principle is simple enough. For each verse, the words of the editorial text are assigned even numbers and the spaces between them, where variants might occur, are assigned odd numbers. Thus, the variant involving κυρίου Ἰησοῦ Χριστοῦ in Jas 1.1 is referenced as "Jas 1.1/8–12" and any variants between κυρίου and Ἰησοῦ would be referenced using "Jas 1.1/9." The important thing to remember is that the numbering of words and spaces is always set to the editorial text and that it begins anew with each verse.

Finally, in the case of percentages, the CBGM's online tools give percentages to the thousandth place (e.g., 90.451 percent). This is so that even a difference of one out of the 3,043 places of variation in the CBGM will reflect the absolute numbers. In this way, even the smallest differences are always observable in the online data.[17] However, I have chosen to give such percentages only to the tenth place (e.g., 90.5 percent) to keep the style cleaner and to reinforce the impression that what is being measured here is textual agreement and not something as granular as stock market values. To achieve such percentages, I have rounded them to the nearest tenth such that 0.451 becomes 0.5. The reader should know that nothing in the argument is affected by this.

4 Preview of the Argument

The argument unfolds in three parts. Part one gives a historical account of the method's development and reception and explains how its current form works; Part two considers the method's value for establishing the initial text of the New Testament; and Part three deals with its ability to elucidate the text's historical

17 This was explained in personal communication from Gerd Mink (March 8, 2017).

development. A final chapter discusses some inherent limitations and suggests a series of improvements.

Each of the three main parts consists of two chapters. Chapter one traces the history of the method before turning to the method's reception by textual scholars. The history tracks some of the early changes to the method and concludes with the milestone that was the publication of the ECM2 in 2013. The reception of the method details a significant amount of confusion and misunderstanding about the method which is addressed in chapter two with an up-to-date, clear, and accurate restatement of the method. This chapter concludes with a number of examples of how the CBGM has been used to edit the Catholic Epistles. This explanation of the method is a contribution in its own right but it also sets the stage for the assessment in subsequent chapters.

The second part considers the CBGM's ability to help establish the initial text of the tradition. Chapter three begins by addressing the confusion that currently exists about the meaning of the term "initial text." The method's claim to be a "meta-method" is also challenged and the chapter concludes with a consideration of whether the method is viciously circular in detecting cases of coincidental agreement. In doing this, we present the results from our own edition of the CBGM which uses the Byzantine text as the initial text. Chapter four is devoted to one application of the CBGM in the effort to attain the initial text: the study of scribal habits. For this chapter, we test the CBGM in James and compare the results to those obtained by studying singular readings. We find that the CBGM has some advantages over this commonly used method and that it does not support a clear preference for the longer or shorter reading.

Part three investigates the CBGM's controversial claim to help our understanding of the text's historical development. Chapter five tests the method's results with a known historical relationship, that of the seventh-century Harklean Group text and that of the ninth-century Byzantine text. Despite claims that the CBGM reverses the historical relationship of these two, our study finds that the CBGM's results fit with the known dates of these two texts but that their precise relationship to each other requires revision. Although contamination remains a problem in some cases, the CBGM is shown to have value for relating texts historically. Chapter six addresses the question of whether the CBGM should include all variants and should initially treat them all equally. We find that the CBGM is inconsistent in some cases and in others it ignores valuable data. Future editions should address these problems.

A final chapter discusses limitations and offers suggested improvements for future versions of the method. In conclusion, we recommend that the method largely succeeds in its aims and that, with some revision, it should continue to be used to edit and study the text of the Greek New Testament and beyond.

PART 1

CHAPTER 1

The History and Reception of the CBGM

Understanding should always precede judgment and part of properly understanding the CBGM is understanding not only its results, but also its development, use, and reception. To that aim, this chapter traces that history in two parts, first considering the CBGM's internal development and then looking at the scholarly reaction to it. Our history begins some thirty years in the past with its inventor's first publication and concludes in 2013 with the publication of the ECM2. This history shows how the method was first conceived by Gerd Mink and highlights some tensions that have attended the method from the beginning. These will be explored in greater detail in later chapters. The second half of the chapter surveys the response to the method so far. In this survey, it will become clear that the engagement has often been marred by misunderstanding. Some of this is, no doubt, due to how complex the method is and how dense the published explanations of it often are. Given this, a simplified but accurate restatement of the method is needed before offering our own critical assessment.

1 History of the CBGM

The story of the CBGM begins in the late 1970s with Gerd Mink who was employed at the Institut für Neutestamentliche Textforschung (INTF) in Münster, Germany, the preeminent place for text-critical research on the New Testament text. It was there that his idea for the CBGM was born and developed. It grew from Kurt Aland's enthusiasm for computer technology which the institute was beginning to apply to the Greek New Testament.[1] Although several of the assumptions behind Mink's method have been in place since the beginning, enough has changed that Mink's mature method should not be confused with his earliest publications on the method. In what follows, we trace that development in three distinct phases marked by the method's birth, growth,

1 See, e.g., Kurt Aland, "Neutestamentliche Textforschung und elektronische Datenverarbeitung," in *Bericht der Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung für die Jahre 1977 bis 1979* (Münster: Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung, 1979), 64–84.

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and maturity. In what follows I have tried, as much as possible, to explain new concepts when they arise in the narrative, but a fuller explanation of key concepts is to be found in the next chapter.

1.1 *Genealogy Reborn (1982–1997)*

The first hints of a new genealogical method for the New Testament arrived in INTF's 1982 report (*Bericht*) on its ongoing work. Mink's contribution to the report opens by noting the recently published study of Adolf Ritter which used database technology to attempt a stemma for the *Corpus Areopagiticum*, a contaminated tradition extant in some 140 manuscripts.[2] Although Ritter's study concluded that no stemma is possible, Mink's report argues that constructing a stemma might be possible if, instead of a stemma of manuscripts, one tries to construct a stemma of their texts. This distinction has become one of the hallmarks of and, indeed, a point of contention about the CBGM so it deserves some attention here. In this essay, Mink is clear about two features of the New Testament's textual tradition. The first is that there are simply too many lost manuscripts to ever produce a detailed historical map. This loss and the problem it creates is not unique to any method—it affects them all.[3] And yet, because of the distinction between text and manuscript, Mink believes that we are not left without hope. If we can produce a stemma of texts, then, to the degree that our extant texts are representative of what once existed, they may elucidate the text's historical development. If we do not think they are a sufficient representation, we must "remain silent about the history of the text."[4] Clearly, Mink's pursuit of his own method means that he thinks there is enough to say *something* about that history. But beyond that, Mink is not clear either about how representative he takes the extant material to be nor about how precisely his own method can represent it. Instead, he says that his method's

2 Adolf Martin Ritter, "Stemmatisierungsversuche zum Corpus Dionysiacum Areopagiticum im Lichte des EDV-Verfahrens," *Nachrichten der Akademie der Wissenschaften in Göttingen* 6 (1980): 1–42.

3 Gerd Mink, "Zur Stemmatisierung neutestamentlicher Handschriften," in *Bericht der Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung für die Jahre 1979 bis 1981* (Münster: Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung, 1982), 112: "Sie wird ihm nicht einmal den detaillierten Verlauf der historischen Entwicklung der Texttypen entnehmen können. Aber ein solches Erkenntnisziel würde ohnehin die Möglichkeiten und Grenzen des Materials ignorieren."

4 Ibid., 108: "Glauben wir aber, daß die vorfindliche Überlieferung die Textgeschichte hinreichend repräsentiert, dann wird die Struktur des Überlieferten die der Textgeschichte spiegeln. Glauben wir dieses nicht, werden wir von der Textgeschichte schweigen müssen."

stemma itself remains "a matter of textual criticism."[5] But exactly what that means is not explained. The historical value of Mink's method remains controversial today and much of that controversy can be traced all the way to the ambiguity present in Mink's very first essay.

In addition to the issue of history, there are several important points of continuity and discontinuity between this essay and the fully-formed version of the CBGM that emerge over the next decade. In terms of continuity, his assumptions about how scribes typically worked, the need to use these assumptions for choosing between competing hypotheses (i.e., parsimony), the method's iterative nature, and, most importantly, its basic principle of deriving the genealogy of texts from the genealogies of their readings are all consistent with the later method.[6] One even begins to sense Mink's unease about the notion of text-types. At the beginning of the essay, he sets his new method against the backdrop of his own unsuccessful attempts at grouping manuscripts. The problem he found with such groups is that the criteria used to demarcate them are either too specific to apply to the entire tradition or end up being arbitrary in their attempt to accommodate the whole tradition.[7] Although in later articles he concedes that some attempts to group manuscripts still have their place, his comments here foreshadow his (and his fellow ECM editors') eventual conclusion that text-types are no longer a helpful concept for making textual decisions.[8]

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5 Ibid., 112: "Die Auswertung eines solchen Graphen ist wiederum eine Sache der Textkritik."

6 Ibid., 104–105.

7 Ibid., 101–104. Cf. the comment in the ECM2 which says that in the 1980s it became clear that "statistical evaluation of agreements and differences is insufficient" for "genealogically relevant results" (ECM2, 31*).

8 On manuscript groups in general, see Gerd Mink, "Towards Computer-Assisted Textual Research," in *Bericht der Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung für die Jahre 1985 bis 1987* (Münster: Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung, 1988), 69; idem, "Eine umfassende Genealogie der neutestamentlichen Überlieferung," *NTS* 39, no. 4 (1993): 487. On text-types in particular, see Gerd Mink, "Was verändert sich in der Textkritik durch die Beachtung genealogischer Kohärenz?," in *Recent Developments in Textual Criticism: New Testament, Other Early Christian and Jewish Literature: Papers Read at a Noster Conference in Münster, January 4–6, 2001*, ed. Wim Weren and Dietrich-Alex Koch, Studies in Theology and Religion 8 (Assen: Royal van Gorcum, 2003), 47–49; idem, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 148–149 n. 16. One wonders what effect Barbara Aland's study

Aside from these continuities, there are two ways in which the fully-developed CBGM moves away from this earliest form. First, this original essay has no discussion of coherence, the central component which gives the later method its name. A second change can be seen in Mink's conception of the overall or global stemma that results from the method. In this 1982 essay, the search for this stemma is, by definition, only "a question of mathematical logic"[9] and involves no text-critical intervention from the editor. It is, as he describes it in another report from around this time, "a stemma of *main* dependencies" and "the simplest *summarizing* hypothesis" of the relationships of individual variants.[10] In contrast, his later conception of the global stemma is one which "must be in harmony with the total of the local stemmata of readings" and which is constructed with sometimes significant editorial intervention.[11] This later concept aims to be truly comprehensive of all variant relationships whereas the original conception appears to exclude some by necessity. We should mention that, at this point, Mink is only working with a small selection of data for the Catholic Epistles. Specifically, he is only using 98 test passages (*Teststellen*) determined for the *Text und Textwert* volumes.[12] The vast expansion of data that became available during the production of the ECM led to significant changes at exactly this point.

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on the Harklean Syriac around this same time may have had on Mink's view of manuscript groups. See, e.g., her comments in "A New Instrument and Method for Evaluating the Total Manuscript Tradition of the New Testament," in *Bericht der Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung für die Jahre 1985 bis 1987* (Münster: Hermann Kunst-Stiftung zur Förderung der neutestamentlichen Textforschung, 1988), 34.

9 Mink, "Stemmatisierung," 112: "Die Suche nach dem optimalen Texttypen-Stemma ist hingegen nach Definition der Sachbedingungen ausschließlich eine Frage der mathematischen Logik."

10 Mink, "Computer-Assisted," 69; idem, "Eine umfassende Genealogie," 484: "Das Gesamtstemma ist die einfachste *zusammenfassende* Hypothese der in den lokalen Stemmata behaupteten genealogische Zusammenhänge" (emphasis added).

11 Gerd Mink, "Editing and Genealogical Studies: The New Testament," *Literary and Linguistic Computing* 15, no. 1 (2000): 52. For the role of editorial intervention, see Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 189–201, esp. 199.

12 Mink, "Computer-Assisted," 69–70. The test passages are found in Kurt Aland, ed., *Text und Textwert der griechischen Handschriften des Neuen Testaments: I. Die katholischen Briefe: Band 1: Das Material*, ANTF 9 (Berlin: Walter de Gruyter, 1987).

The first major description of Mink's new method was published in 1993.[13] This is the first time the concept of coherence is discussed and the first time we see diagrams illustrating Mink's principles. Already coherence is used to determine where a variant may have developed independently in several witnesses,[14] but there is no distinction yet between different kinds of coherence and little sense that coherence can be measured. On the question of history, there is slightly more detail here than in the previous essay. He says that a prerequisite of his method is that the text has typically developed "organically" and that this development is "adequately represented in the manuscripts."[15] But the uncertainty about what the stemma represents vis-à-vis history persists. On the one hand he can say that his stemma is "a hypothesis of the textual history" and that this textual history is "a theory of the development and of the filiation of textual states."[16] But, on the other hand, his final section states quite strongly that his method "gives no information about the actual filiation of either manuscripts or of their texts."[17] He immediately adds that no other method can do this either, in which case, he must mean "filiation" in the precise sense of a *direct* relationship. Regardless, the signals about his method's relationship to history remain mixed.

1.2 *Coherence Takes Shape* (*1997–2005*)

The most important changes to Mink's method appear between the publication of the first and last installment of the ECM1.[18] In the first installment in 1997 there was no use of Mink's method and by the fourth and final installment the CBGM has come "constantly into play in the reconstruction of the text."[19] This

13 Mink, "Eine Umfassende Genealogie." This article was based on a lecture given at the 1991 SNTS conference (personal communication).

14 Ibid., 483.

15 Ibid., 482: "Die Voraussetzung dafür ist, daß sich im Durchschnitt die Textgeschichte organisch entwickelt hat und daß diese Entwicklung hinreichend in den Handschriften repräsentiert ist."

16 Ibid., 484, 483: "Im Gegensatz zum lokalen Stemma der *Lesarten* ist das *Gesamtstemma* eine Hypothese der Textgeschichte …"; "Die *Textgeschichte* wäre nun eine Theorie der Entwicklung und der Filiation der Textzustände" (emphasis original).

17 Ibid., 493: "Eines leistet die Methode nicht: Sie gibt keine Auskunft über die tatsächliche Filiation der Handschriften und auch nicht der Textzustände. Aber auch keine andere Methode kann hier den historischen Befund ersetzen, der leider fast nie zu erreichen sein wird."

18 ECM IV/1.1; ECM IV/1.2; ECM IV/1.3; ECM IV/1.4.

19 ECM IV/1.4, 37*. The term "Coherence-Based Genealogical Method" is first used in the preface of the third installment.

period includes the transition to the revised conception of the global stemma mentioned above. Most importantly it includes the development of three distinct types of coherence. Mink himself feels that his approach changed so much during this period that what came before should not even be labelled as the CBGM.[20] The main catalyst for the change was the enormous increase in data. Whereas the book of James had previously afforded only twenty-five places at which to compare witnesses, the first installment of the ECM increased that number to 761. Another major advancement at this time was the adoption of Peter Robinson's *Collate* software which provided automation to the process of comparing manuscript transcriptions. The software worked from full-text electronic transcriptions which could be collated and re-collated in a matter of seconds. Producing these transcriptions was still manual, but the software enabled a quick, comprehensive and repeatable approach to the process of comparing witnesses and generating a list of variants.[21] Only with this vast increase in textual data could the method seriously begin to leverage the notion of coherence and so become the *Coherence*-Based Genealogical Method.[22]

The second installment of the ECM was the first to mention Mink's method and the first to introduce its readers to "coherence." This term is defined only in a footnote as meaning that "the members of the group [of witnesses] are connected by a direct genealogical relationship."[23] But there is no explanation as to how they are connected or why this is significant. The reader is simply left to wonder why exactly coherence is now "an important factor in the evaluation of variants."[24] An article by Mink published the same year gives slightly more detail on how coherence works[25] and by 2002 an online descrip-

20 Personal correspondence (May 2, 2014). The ECM2 (p. 31*) dates the development of the CBGM to the availability of the data for James. It is thus a problem when a critic says "I do not see that the main features of the method have changed over the years" as does Bengt Alexanderson in *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method* (*CBGM*) *and the Editio Critica Maior* (*ECM*), Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014), 59.

21 For details, see Klaus Wachtel, "Editing the Greek New Testament on the Threshold of the Twenty-First Century," *Literary and Linguistic Computing* 15, no. 1 (2000): 47–48.

22 ECM2, 31*.

23 ECM IV/1.2, 23*. The fact that coherence is defined as the presence of *direct* genealogical relationship conflicts with Mink's earlier caveat that no *direct* genealogy is implied by his method. See Mink, "Stemmatisierung," 108.

24 Ibid., 24*.

25 Mink, "Editing and Genealogical Studies."

tion of the CBGM explains three distinct types of coherence.[26] The three types of coherence are there distinguished as "pre-genealogical," "genealogical," and "stemmatic" and each has a distinct function. They are different enough, in fact, that hindsight suggests that different terms for each might have avoided some confusion. In any case, what each type has in common is that they all describe some type of agreement or relationship between texts.

All three types will be explained in greater detail in the next chapter, but here a word about the third type—stemmatic coherence—is relevant as it constitutes the major shift in Mink's conception of the method's resulting stemma known as the global stemma. Previously, the construction of the global stemma was completely automated; it required no editorial intervention.[27] With the advent of stemmatic coherence this completely changed. Not only was the editor allowed (and encouraged) to intervene in particular variant relations, but the nature of the global stemma itself changed. Whereas before the computer could simply ignore some relations between particular variants in its attempt to relate entire witnesses, now the global stemma was constructed such that "the relation among the witnesses at any given place of variation is compatible with their relation within a global stemma."[28] In other words, none of the "micro" relations between individual variants are left out of the "macro" relations between the witnesses. In short, the resulting global stemma becomes truly comprehensive for the first time. No variant relations are left unrepresented.

This move away from automated construction of the global stemma interestingly coincides with a shift away from the previous focus on the global stemma itself. Whereas the original goal had terminated prominently on this global stemma, attention now shifts toward using the method as an aid in making textual decisions. This shift is on display in a number of essays published in this period. In a seventy-two-page article from 2004, for example, the global stemma as such is discussed in just three pages at the end and this without any detail about how it might address historical questions. This compares to thirteen pages which are given to explaining how genealogical coherence is used at specific points of variation.[29] Another essay from this period is entirely

26 Gerd Mink, "The Coherence-Based Genealogical Method—What Is It About?" (Münster: INTF, 2002), http://egora.uni-muenster.de/intf/projekte/gsm_aus_en.shtml. This is the earliest use of the name "Coherence-Based Genealogical Method."

27 Personal correspondence with Gerd Mink (May 2, 2014).

28 Mink, "What Is It About?" (emphasis removed).

29 Mink, "Problems," 38–49, 74–76.

devoted to the question of how coherence has changed textual criticism. The conclusion lists twelve such ways. Some of these are specific to the CBGM (e.g., it helps relate variants to each other) but others have much broader ramifications (e.g., a much greater appreciation for the Byzantine text; the emergence of a number of important new witnesses; the reconsideration of arguments based on text-types, etc.).[30] The trend continues into the publication of the third and fourth installments of the ECM where genealogical coherence has become "one central external criterion" and an "indispensable tool" for the editors.[31] The method has shifted its focus from relating texts in a stemma to helping make specific text-critical decisions. No doubt this is due in part to pragmatics as the demands of producing the ECM naturally shifted focus to producing a critical text more than to studying a comprehensive view of textual history. Whatever the precise cause of the shift, it marks an important transition in the history of the method's development.

If the explication of coherence and the changes in the global stemma constitute important changes for the CBGM in this period, the lack of clarity about its relation to history remains unfortunately consistent. In his 2002 online description of the method, Mink repeats his claim that the method is not concerned to "reconstruct in detail historical processes" because the available material makes such a goal impossible. What his method does attempt to find is the "structure which interprets in the most straightforward way the genealogical relations between the available states of text."[32] This term "structure" is one that proliferates in subsequent descriptions of the method's results and accounts for much of the ambiguity. The method is described in this same period by Mink's colleague at INTF, Klaus Wachtel, as one among other methods that attempt "to analyse and describe the history of a text."[33] Wachtel goes on to explain that Mink's method does surrender some detail about history by foregoing the reconstruction of lost witnesses, a prominent feature of most stemmatic methods. The only exception is the editor's own reconstructed text which, within the method, is treated as a hypothetical witness. The absence of more such reconstructed witnesses is said to have little effect on the method, however, since it is concerned not with relating manuscripts as such but only

30 Mink, "Was Verändert sich," 66–68.

31 ECM IV/1.3, 30*; ECM IV/1.4, 37*.

32 Mink, "What Is It About?"

33 Matthew Spencer, Klaus Wachtel, and Christopher J. Howe, "The Greek Vorlage of the Syra Harclensis: A Comparative Study on Method in Exploring Textual Genealogy," *TC* 7 (2002): § 14, http://rosetta.reltech.org/TC/v07/SWH2002/.

with relating their texts.[34] As will be seen, however, the distinction between text and manuscript does not resolve the historical question for the CBGM; on the contrary, it is largely responsible for it.

The period from 1997–2005 is the most important of the three in the development of the CBGM. Not only does it witness the development of coherence as the central component, but it also highlights the symbiotic relationship between the ECM and the CBGM. By the third installment of the ECM, the new method is listed as characteristic feature of the very edition that spawned it.[35]

1.3 *Explanation and Extension* (2005–2013)

The final period in our history of the CBGM centers on two themes, both of which grow out of the method's maturity in the preceding years. These two themes are the increased importance of the method for those in Münster and, with that, an increased need to explain it to outsiders. The once-promised commentary on the ECM has yet to materialize, but the editors found other ways to explain their use of the CBGM.[36] At another level, the development of the CBGM during the production of the ECM1 resulted in a variable implementation across the four installments.[37] The text of James, for example, was revised after its initial publication while the text of 1–2 Peter was constructed with genealogical data borrowed from James.[38] With the completion of the fourth installment, the editors finally had genealogical data for the whole corpus. This shifting application led the editors to revisit their textual decisions afresh in a second edition of the ECM using a version of the CBGM which now incorporated data from all the Catholic Epistles. The result is two corresponding editions of the ECM and the CBGM.

In 2006, an attempt to address the need for explanation came at a conference sponsored by the Centre for the Study of Christian Origins at the University of Edinburgh. The event was advertised as an opportunity to learn about changes to the Nestle-Aland text and the main speakers were Holger Strutwolf and Klaus Wachtel, both editors of the ECM.[39] Paul Foster reports that the morning

34 Ibid., §14.4.

35 ECM IV/1.3, Preface.

36 The second installment explains that "grounds for textual decisions are given in the Supplement" (ECM IV/1.2, 24*) and the fourth installment likewise speaks of "notes which follow on the reconstruction of the text" (ECM IV/1.4). The preface of the ECM2 still promises "a third volume with accompanying studies." None of these have materialized.

37 ECM2, 31*.

38 ECM IV/1.2, 23*–24* (for James, see p. 23 n. 4).

39 Strutwolf is first listed as an editor in ECM IV/1.4 in 2005.

paper by Wachtel garnered much interest with many questions "teasing out the exact mechanics."[40]

Following the 2006 day-conference, a major three-day conference was convened in 2008. Participants were invited to Münster so that the editors of the ECM could "discuss a decisive phase of their work with partners and colleagues."[41] The whole second day of the conference was set aside just for Mink to explain the CBGM to the invited guests. The slides from this presentation were published online the next year and an important volume with all the papers, including a version of Mink's presentation, appeared in 2011.[42] The subtitle of the volume—Changing Views in Contemporary Research—reflects something of the importance ascribed to the CBGM. As Mink puts the matter in his essay, the 563,195 datasets behind the ECM make it "obvious that text-critical work cannot simply continue as before."[43] Both internal and external evidence are affected by the ability to investigate the textual tradition in such detail.

The level of coherence among witnesses, for example, is said to play a particularly important role in judgments about when a reading is the *lectio difficilior*, when a reading is genealogically connective, and when it can be traced back to the hypothetical initial text. In the case of 2 Pet 3.10, the CBGM led the editors to print a reading with no known Greek manuscript support. The most potentially far-reaching effect of the CBGM is the editors' conclusion to forego grouping witnesses by text-type and instead search for the "structure that will emerge" from the CBGM.[44]

Internal evidence too is affected in new ways by the method. Strutwolf argues that the CBGM provides a better way of studying scribal habits than the study of singular readings as pioneered by E.C. Colwell and advanced especially by James Royse.[45] We will have opportunity to examine these claims in chapter four.

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40 Paul Foster, "Recent Developments and Future Directions in New Testament Textual Criticism: Report on a Conference at the University of Edinburgh," *JSNT* 29, no. 2 (2006): 234.

41 Klaus Wachtel and Michael W. Holmes, "Introduction," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 2.

42 Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (Münster: INTF, 2009), http://www.uni-muenster.de/INTF/cbgm_presentation/download.html; Klaus Wachtel and Michael W. Holmes, eds., *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, Text-Critical Studies 8 (Atlanta: SBL, 2011).

43 Mink, "Contamination, Coherence, and Coincidence," 148.

44 Ibid., 148–149.

45 Holger Strutwolf, "Scribal Practices and the Transmission of Biblical Texts: New Insights

Aside from the conference, 2008 was significant because it was the first time that scholars were given public access to the CBGM's datasets. An online set of tools referred to as "Genealogical Queries" provided lists of potential ancestors and descendants for each witness, allowed statistical comparison of any two witnesses, enabled the exploration of coherence, and gave access to the editors' individual decisions in the Catholic Epistles. Scholars now had access to concrete data for the procedures and concepts that had hitherto existed almost entirely as abstractions. This online set of tools is what constitutes the CBGM version 1.0 and it remains available online.[46] Importantly, it reflects the results *from* the ECM1 rather than the data that led *to* it.

The ECM2 appeared in 2013 and was based on the genealogical data for the entire Catholic Epistles. Passages where the Byzantine text differed from the editorial text, passages previously left undecided, and passages marked as uncertain in the first edition were all subject to revision.[47] This resulted in twelve changes to the primary line text. One-fourth of these are in James, the text subject to the most methodological change over the course of the ECM's development. The number of passages marked uncertain in the second edition was reduced to forty-three, down from 125 in the first edition.[48] In all this, "ample use" was made of the CBGM and, despite the editors' claims that this use imposed no bias in their decisions,[49] the changes in their use of "reasoned eclecticism" are noteworthy. Both internal and external evidence are affected by the CBGM, according to the introductory notes. Externally, the editors reassert their problems with the notion of text-types and explain how their new regard for Byzantine manuscripts which contain a text deemed "extremely reliable" beyond its "particular variants" led them to reconsider all the places where it differed from the text of the ECM1.[50] The results of this

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from the Coherence-Based Genealogical Method," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 139–160; cf. E.C. Colwell, "Method in Evaluating Scribal Habits: A Study of $\mathfrak{P}^{45}$, $\mathfrak{P}^{66}$, $\mathfrak{P}^{75}$," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 106–124; James R. Royse, *Scribal Habits in Early Greek New Testament Papyri*, NTTSD 36 (Leiden: Brill, 2008).

46 See http://intf.uni-muenster.de/cbgm/en.html.

47 ECM2, 34*. The first installment designated readings of "equal value" with the initial text by a bold dot. But in subsequent installments its use became inconsistent.

48 ECM2, 34*. The changes to the primary line text are listed in ECM2, 35*–36*.

49 ECM2, 35*. The German claims only that the CBGM did not "predetermine" (*vorgibt*) the editors' decisions (ECM2, 16*).

50 Ibid., 34*.

shift can be seen in the fact that ten of twelve changes between ECM1 and ECM2 are in favor of the Byzantine text. Moreover, in every single case, there is support against the newly-adopted reading from significant early witnesses such as P72, 01, 02, 03, and 04.[51] Genealogical coherence has now become the most commonly used aspect of the CBGM,[52] but the global stemma remains conspicuously absent. It is not even mentioned in the introductory material to the ECM2.

Just prior to the appearance of the ECM2 in print, the CBGM reached what may fairly be considered its most important milestone to date with the publication of the NA28. For the Catholic Epistles, this important edition adopted the text of the ECM2. Two years later, the UBS5 followed suit. Readers of the NA28 learn in the introduction that the Catholic Epistles have now been "revised according to a fundamentally new concept" which will, in time, be applied to the entire edition.[53] The USB5 is somewhat more circumspect. The introduction notes that it has "been made consistent with" the ECM in the Catholic Epistles, but mentions the CBGM only as it affects "the selection of witnesses."[54] Thus, the results of the CBGM are now reaching their widest audience yet as these new editions find their way onto the desks of students, professors, pastors, and translators around the world.

Despite the new method adopted, neither NA28 or UBS5 explains to the reader how the CBGM works. Looking to the official user's guide to the NA28, the reader is left worse off.[55] There one finds only two pages on the CBGM and these include several misstatements.[56] Moreover, the description itself offers

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51 See Jas 1.20/12–14; 2.4/2–6; 2.15/16–18; 4.10/6–8; 1Pet 5.1/2–10; 2Pet 2.18/22; 2.20/22–30; 2John 5/16–22; 12/50–52; 3John 4/22–26.

52 ECM2, 32*, 34*.

53 NA28, 48*.

54 UBS5, 1*–6*. Exactly how the ECM will relate to the UBS edition now that a new committee has been formed for the latter remains unclear. As longtime users may know, the NA and UBS editions have printed the same text since their 26th/3rd editions. See Kurt and Barbara Aland, *The Text of the New Testament: An Introduction to the Critical Editions and to the Theory and Practice of Modern Textual Criticism*, trans. Erroll F. Rhodes, 2nd ed. (Grand Rapids: Eerdmans, 1989), 32–33.

55 David Trobisch, *A User's Guide to the Nestle-Aland 28 Greek New Testament*, Text-Critical Studies 9 (Atlanta: SBL, 2013), 53–54.

56 The English edition describes a stemma that requires that "virtual manuscripts" be used and that they be treated with equal weight as existing manuscripts. In fact, the CBGM works with texts not manuscripts and, aside from the initial text, does not reconstruct lost texts. The problem appears to be one of translation since the German edition quite rightly refers only to the initial text as "eine virtuelle Text" and says that it is treated, for purposes

no real explanation of how the CBGM has affected the text. Instead, just as they are in the NA28 itself, readers are pointed to Mink's 2011 essay to learn more. The problem is that, if scholars in the field have characterized this essay as "demanding,"[57] readers in need of a "user's guide" to the Nestle-Aland edition will hardly fare better. In short, although the method expanded both in use and in reach, the need this raised to explain the method to those beyond its current users has not been adequately met. Users of the most popular editions that adopt the CBGM's results are left in the dark about its inner workings. As we will now see, the problem of understanding the CBGM is not restricted to students but affects even seasoned textual critics.

2 Reception of the CBGM

As described above, it was only after 2000 that the need to explain the CBGM to the wider scholarly community became acute. A major step in this direction was taken with the 2008 colloquium held in Münster. Since then, a coterie of textual scholars has critically engaged with the method. Wider engagement has been much more limited, one reason for which is undoubtedly is its sheer complexity. Eldon Epp is surely right to say that "many will admit that the functioning of the CBGM is not always easily grasped."[58] But, aside from the complexity of the method, another factor may be the lack of access. Only in 2008 were the data used to edit the ECM put online and even then there was no way to change them. To this day scholars are not able to use the CBGM with their own text-critical decisions—a feature, as we will see, that sits at the foundation of the method. Nevertheless, some scholars have ventured to engage the method either in print or in public presentations and it will be useful to consider their contributions under the broad heading of the reception of the method.[59] As will be seen, one of the recurring themes from such a survey is that, to return to Epp's words, the method is not easily—and we might add often—grasped.

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of the stemma, as "eine erhaltene Handschrift;" see David Trobisch, *Die 28. Auflage des Nestle-Aland: Eine Einführung* (Stuttgart: Deutsche Bibelgesellschaft, 2013), 61–62.

57 Scott Charlesworth, "Review of *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*," *TC* 18 (2013): § 10.

58 Eldon J. Epp, "Textual Clusters: Their Past and Future in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 550.

59 Most of the attention given to the CBGM has been in German and Anglophone scholarship,

2.1 *David C. Parker*

One of the first scholars outside Münster to write about the CBGM was David Parker, the current director of the Institute for Textual Scholarship and Electronic Editing (ITSEE) at the University of Birmingham (UK). He remains one of the few text critics from outside Münster to publicly endorse the CBGM. His positive reaction to the CBGM must be considered in light of ITSEE's collaboration with INTF on the ECM volume for John's Gospel which has been in place since 1997.[60] This role has given Parker a front row seat to the CBGM's development such that, at a time when most scholars were only catching their first glimpses of the actual data, he was hailing it as a breakthrough. In his 2008 introduction to textual criticism he describes the CBGM as combatting all three problems that have plagued past genealogical methods, namely, contamination, coincidental agreement, and variants whose genealogy is reversed later in the tradition.[61] Parker's description of the CBGM is positive and largely helpful. There are, nevertheless, some problems such as his mislabeling of "local stemmata" as "substemmata" and his somewhat confused description of the various types of coherence.[62] He also makes the mistake of treating the textual flow diagram for James as if it were a traditional stemma giving us "the most probable relationships between the manuscripts."[63] This is despite his earlier (and correct) statement that the CBGM always differentiates text from manuscript.[64] If Parker has hesitations about the method, they are not on display here and he readily incorporates the CBGM's results in his discussion of the textual history of the Catholic Epistles. Like his colleagues in Münster he concludes that the results there are "irreconcilable with the traditional view of text-types" while admitting that this conclusion cannot immediately be applied elsewhere.[65]

Parker returned to the CBGM at much greater length in his 2011 Lyell Lectures, this time with even higher praise for the method. He says its contribution

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but occasionally it has reached beyond. See, for example, Riccardo Maisano, *Filologia del Nuovo Testamento: la tradizione e la trasmissione dei testi*, Manuali Universitari 153 (Rome: Carocci, 2014), 149.

60 See Klaus Wachtel and David C. Parker, "The Joint IGNTP/INTF Editio Critica Maior of the Gospel of John: Its Goals and Their Significance for New Testament Scholarship" (paper presented at the annual meeting of the SNTS, Halle, 2005), 1, http://epapers.bham.ac.uk/754/1/2005_SNTS_WachtelParker.pdf.

61 David C. Parker, *An Introduction to the New Testament Manuscripts and Their Texts* (Cambridge: Cambridge University Press, 2008), 169.

62 Ibid., 169–170.

63 Ibid., 307.

64 Ibid., 170.

65 Ibid., 170, 307; cf. 174.

to textual scholarship "is great" and that it leads "towards a high level of consistency."[66] His only real criticism is that the method may not take adequate account of the physical characteristics of manuscripts.[67] Positively, his description is fuller than before and easier to digest than many of Mink's. It also shows a more accurate grasp of coherence and a clearer sense of the limitations of textual flow diagrams (to be discussed later).[68] Some confusions linger though as he still refers occasionally to "manuscripts" when he means "texts" and when he confuses a textual flow diagram with "a global reconstruction of all the manuscripts."[69] More problematic is his claim that the method is "at last able to make Lachmannian stemmatics workable in a complex tradition."[70] As we will see, such a comparison between Lachmannianism and the CBGM ignores the fundamental differences between them. In any case, Parker's explanation of the CBGM in these lectures remains a helpful introduction but one to be used with an awareness of these misstatements.

2.2 *Tommy Wasserman*

Tommy Wasserman is a more recent advocate of the CBGM than Parker although he has expressed more reservation. His first engagement with the CBGM came with his published dissertation on the text of Jude.[71] At this point, the ECM1 for Jude was publicly available but the CBGM data behind it were not. He nevertheless considers the CBGM the best available "comprehensive method for the genealogical reconstruction of the textual tradition"[72] although he gives no hint as to what its competitors might be in this regard. He does, however, have some reservations. He wonders, for example, why 03 and 1739 are the only first rank witnesses across the entire Catholic Epistles and asks whether this might be an indication of a bias in favor of these manuscripts.[73]

Since the publication of his dissertation, Wasserman has engaged with the CBGM on a number of occasions.[74] In one essay he refers to it as "a major break-

66 David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 98.

67 Ibid., 96.

68 Ibid., 94–95, 98.

69 Ibid., 86–87.

70 Ibid., 84; cf. 98–99.

71 Tommy Wasserman, *The Epistle of Jude: Its Text and Transmission*, Coniectanea Biblica New Testament Series 43 (Stockholm: Almqvist & Wiksell, 2006), 16–17, 23–24, 122–124.

72 Ibid., 124.

73 Ibid.

74 See Tommy Wasserman, "Criteria for Evaluating Readings in New Testament Textual

through" and hopes that it will receive wide usage.[75] His discussions generally reflect a thorough familiarity with the CBGM despite occasional lapses (the global stemma of the Catholic Epistles, for example, does not yet exist).[76] His concerns about 03 have been alleviated since his work on Jude and he now finds that the primary focus on individual points of variation is "admittedly a factor that prevents bias toward a certain witness or group of witnesses."[77] He does, however, wonder whether the method's assumptions about scribes and its need for overall coherence will allow it to work equally well in all parts of the New Testament and across all periods of its transmission history. He likewise wonders about the degree to which the use of pre-genealogical coherence governs the later stages. A final concern is the absence of a truly public version of the CBGM, one which scholars and students can use with their own textual decisions.

Despite these reservations, Wasserman's confidence in the CBGM shows itself most in his willingness to revise several text-critical criteria in light of it. With regard to external evidence which deals with the quality of manuscripts as witnesses to the text, Wasserman suggests that a reading is to be preferred if supported by witnesses with the editor's "initial text" as their closest potential ancestor or if the relationships between readings are "coherent with predominant textual flow in the book or corpus."[78] With regard to internal evidence which attempts to distinguish scribes from authors, he suggests a brand new criterion based on the level of coherence among witnesses in the CBGM,[79] a notion explained in the next chapter. He has since utilized this criterion to argue for the longer reading in Mark 1.1 and against a theologically-motivated change in 1John 5.6.[80] Despite his initial reservations, Wasserman is now quite

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Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 579–612; idem, "The Coherence Based Genealogical Method as a Tool for Explaining Textual Changes in the Greek New Testament," *NovT* 57, no. 2 (2015): 206–218; idem, "Historical and Philological Correlations and the CBGM as Applied to Mark 1:1," *TC* 20 (2015): 1–11.

75 Wasserman, "Criteria," 607.

76 Wasserman, "Criteria," 595, 605. Cf. Wasserman, *Jude*, 24.

77 Wasserman, "Criteria," 599, 606 n. 105.

78 Ibid., 605.

79 Ibid., 606.

80 See Wasserman, "Correlations"; idem, "Criteria," 603–604; idem, "A Tool for Explaining Textual Changes," 210–213. Another example of this type of use of the CBGM is found in Toan Do, "Μόνον or μονῶν? Reading 1John 2:2c from the Editio Critica Maior," *JBL* 133, no. 3 (2014): 603–625. Unfortunately, Do has not always used the CBGM (or the ECM) correctly.

positive about the method and has been eager to use it to resolve specific textual problems.

2.3 *Timo Flink*

Another scholar who has made use of the CBGM is Timo Flink. Like Wasserman, his interaction involves the text of Jude.[81] Despite some reservations about the CBGM's applicability in the Gospels, he concludes that the level of coherence in Jude is such that the "CBGM appears to be a viable method."[82] He is not without criticism, however, as he suggests that the editors of the ECM "have not given enough weight to the external evidence proposed by the CBGM method."[83] But his own use of the CBGM is idiosyncratic and flawed at a key point.

Following the ECM editors, Flink divides witnesses based on their putative relationship to the reconstructed text.[84] His three groups are determined by whether a manuscript has the editors' text as its first, second, or third-to-fifth potential ancestor. But Flink's use of the CBGM goes astray when he suggests that these three groupings can be read as a trajectory "from earlier generations to later ones" and that readings with trajectories in later generations should be given more attention than those with no trajectories.[85] To those familiar with the CBGM, these "trajectories" are remarkably similar to the CBGM's own textual flow diagrams, but with one fatal difference: his trajectories make no allowance for contamination. An illustration from Jude 18 will make the point. For the reading ἐπ' ἐσχάτου χρόνου, Flink's trajectory is set up as P72, 03, 04, 044 // 623 // 5, 1243 (where the slashes are meant to distinguish one "generation"

He speaks of nineteen "variants … for μονῶν" when he means nineteen witnesses of that one variant; he claims that the ECM records 540 manuscripts for the Catholic Epistles which it does not; he speaks of the "parent manuscript" of a *reading* in the CBGM which makes little sense; and he misreads the textual flow diagram as a stemma, leading him to claim that the initial text (A) constitutes a "parent manuscript."

81 Timo Flink, *Textual Dilemma: Studies in the Second-Century Text of the New Testament*, University of Joensuu Publications in Theology 21 (Joensuu: University of Joensuu, 2009), 93–126. His earlier discussion is found in Timo Flink, "Reconsidering the Text of Jude 5, 13, 15 and 18," *Filología Neotestamentaria* 20 (2007): 95–125.

82 Flink, *Textual Dilemma*, 51.

83 Ibid., 123. In all the places where Flink mentions genealogical coherence he does so to register his disagreement with Mink about its significance (Flink, "Reconsidering," 116; idem, *Textual Dilemma*, 112, 114; Mink's response is found in "Problems," 187 n. 77).

84 Flink, *Textual Dilemma*, 97. For the rankings, see ECM IV/1.4, 36*.

85 Flink, *Textual Dilemma*, 97.

from the next).[86] In Flink's system this constitutes a solid trajectory which gives credence to the reading. But a closer look at the CBGM shows that these witnesses are not closely related. For example, none of 623's ancestors within the CBGM are even in this trajectory. The same problem attends 1243. The closest ancestor for 1243 is 04 in the CBGM and yet this witness is placed as a third-generation witness in Flink's trajectory. Exactly how the CBGM determines such ancestry will be explained in the next chapter. Here we simply note that Flink's basic problem is treating the agreement of readings in isolation from the larger agreement of their witnesses. In doing so, he has completely excluded contamination as a possible explanation in his trajectories. Because of this, these trajectories do not offer "a plausible starting point" for evaluating external evidence nor do they give a "particular aspect of the CBGM [that] might be useful on any future work on NT textual criticism."[87] Instead, these trajectories misunderstand one of the method's most important benefits: its ability to detect contamination.

2.4 *Eldon Epp*

Along with Parker, one of the most prominent New Testament textual critics to engage with the CBGM is Eldon Epp who does so at a number of places in his defense of text-types (or "textual clusters" as he calls them).[88] In describing the CBGM alongside other quantitative methods, he says that it "holds much promise for showing the genealogical relationships of readings in individual variation units and also for creating a global stemma."[89] But, as this quote illustrates, Epp's understanding of the method is not always clear. The method does not really hold "much promise" for showing genealogical relationships for the simple reason that it is *based* on them.[90] Later, Epp says that pre-genealogical coherence is formed by relating variants to each other in the local genealogies when, as will be clear in the next chapter, the relationship is the other way around: pre-genealogical coherence is used to construct local genealogies.

Despite the misunderstandings, Epp raises a number of important questions for the CBGM. His main critique is lodged, not against the CBGM as such,

86 Ibid., 120.

87 Ibid., 97.

88 See Epp, "Textual Clusters," 549–553, 556–558, 564–565, 571–572.

89 Ibid., 549.

90 Perhaps Epp meant to say that the CBGM holds promise in showing genealogical relationships of *witnesses* at individual points of variation. If so, this would be an apt description of the CBGM's textual flow diagrams. But it is not clear from Epp's essay.

but against the claims that its results invalidate the use of text-types in New Testament textual criticism. He notes, first, that the only corpus to which the CBGM has been applied is one in which text-types have never been especially important. More troubling to Epp is the fact that the CBGM does not incorporate versional and patristic data, key evidence for identifying certain text-types, particularly the "Western" in Acts. Without these, Epp wonders whether it is any surprise that the method does not turn up the traditional text-types. Additionally, he raises concerns about the slim differences that sometimes determine witness relationships in the CBGM. In his example, witness 468 is a possible ancestor of 617 based on only "a fraction of 1 percent in over 3,000 variation units."[91] In fact, Epp's figures are skewed because of a conflation of the two factors that determine witness relationships in the CBGM. The CBGM uses agreements to determine how closely two witnesses are related, but it uses disagreements to determine the main direction of that relationship. In the case of 468 and 617, there are 2,904 places where they agree in the CBGM. Crucially, these places tell the CBGM nothing at all about the *direction* of their relationship. Only disagreements do that. Thus, it would be more accurate to say that 108 of their 133 *disagreements* determine the specific direction of their relationship in the CBGM. That amounts to 81 percent, a far higher number, obviously, than Epp's one percent. Despite this error, it needs to be said that Epp's suspicion about narrow margins for determining genealogy is an important one, one raised by other scholars, and one we will return to especially in chapter five.

2.5 *Dirk Jongkind*

The most significant critique of the CBGM so far has come from Dirk Jongkind in two consecutive presentations at annual SBL meetings. Both remain unpublished,[92] but the first paper was significant enough that the INTF staff invited Jongkind and other guests (including the present writer) to discuss it at a meeting in Münster shortly after it was presented. This was held on January 27,

91 Ibid., 551. We follow Epp here in using the figures from version 1.0 of the CBGM.

92 Dirk Jongkind, "On the Weighing and Counting of Variants: The Coherence Based Genealogical Method, Potential Ancestors, and Statistical Significance" (paper presented at the SBL Annual Meeting, Baltimore, November 25, 2013), 1–14; idem, "On the Nature and Limitations of the Coherence Based Genealogical Method" (paper presented at the SBL Annual Meeting, San Diego, November 22, 2014), 1–19. The second paper was part of a larger session on the CBGM. The papers from this were later published in volume 20 of *TC* (2015) with the exception of Jongkind's own paper which the editors summarize.

2014 with the goal to address Jongkind's criticisms.[93] These criticisms can be summarized as follows: (1) the nature of the CBGM's data is inadequate to the detailed level of analysis attempted and (2) the CBGM is incapable of representing certain important historical scenarios. The paper from Jongkind's SBL presentation in November of the same year is more affirming of the method overall, but these two criticisms remain.

Jongkind's first criticism is similar to Epp's and focuses on the "softness of the data" between some witness relationships in the CBGM. Where he goes further than Epp, is in trying to give a concrete answer to whether the data is too soft. Using a statistical test known as binomial distribution, Jongkind tried to show that a random process could, in many cases, produce the same data that, in the CBGM, were taken to be genealogically significant. Where this was the case, Jongkind argued that the CBGM data should be rejected as statistically unreliable. He further advanced his critique with his second objection by providing a hypothetical scenario in which the CBGM, like other genealogical methods, fails in the face of contamination. In particular, Jongkind's scenario showed that, in the right circumstances, the CBGM will completely invert the historical relationship of witnesses involved. The details for this particular problem will occupy us at some length in chapter five. As far as the method's reception is concerned, Jongkind's paper is most significant for the clarifications it elicited from Mink.

In response, Mink pointed out that (1) statistical significance tests such as binomial distribution are not valid in assessing the CBGM data; (2) users of the method should know not to base "far-reaching conclusions … on small differences" in the data;[94] and (3) the CBGM, "like any other method," cannot detect relationships that left no trace.[95] On the first point, Mink points out that using probability tests like binomial distribution to test the CBGM's data

93 Circulated beforehand was an expanded version of Jongkind's SBL presentation and a response from Mink: Dirk Jongkind, "Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks" (paper presented at INTF colloquium, Münster, January 27, 2014), 1–21; Gerd Mink "Some Notes on Dirk Jongkind's Paper 'Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks'" (paper presented at INTF colloquium, Münster, January 27, 2014), 1–12.

94 Mink, "Some Notes," 5.

95 Compare the comment of Tarrant who writes that "stemmata can only represent witnesses that survive or that have left some trace in the tradition." Richard Tarrant, *Texts, Editors, and Readers: Methods and Problems in Latin Textual Criticism*, Roman Literature and Its Contexts (Cambridge: Cambridge University Press, 2016), 53.

does not work because such tests only tell you how likely it is that a random process (like flipping a coin) could produce a particular distribution of data; they do not tell whether a *non-random* process (like scribal copying) could produce that same distribution.[96] Regarding the second point, Mink reports that he did try at one point to set thresholds to filter out weak relationships, but he found that these were inevitably arbitrary and could have dramatic effects.[97] Mink's third point provides significant clarification about the CBGM's relationship to historical reconstruction. He recognizes Jongkind's artificial scenario as a genuine problem for the CBGM. But his concern is minimal because "no method can detect historical scenarios which did not leave any trace."[98] He adds that, if there was some trace of this scenario from outside the CBGM, such information could readily be incorporated at any number of stages where the method requires editorial intervention. He also remarks at one point that the CBGM itself "does not represent historical scenarios at all,"[99] a rather striking concession. Later in the paper he seems to qualify this when he says "the CBGM gives no *immediate* historical answers. Yet, the text historian (well acquainted with the rules and limitations of the method) should ask why the CBGM reveals a certain structure and what the historical scenario behind [it] may be."[100] Unfortunately, he gives no indication of *how* the text historian should go about answering this last question.

Of all the responses to the CBGM, Jongkind's has been the most significant not only for its serious challenge to the method but also for the response it has drawn from Mink. The issue of the statistical uncertainty of some relationships in the CBGM and, particularly, the ongoing question of the method's relationship to history are ones that come up again and again. Both of will occupy us in later chapters.

2.6 *Bengt Alexanderson*

If Jongkind's is the most substantial, the most sustained criticism of the CBGM has come from Bengt Alexanderson. In his book on New Testament textual criticism, he gives a lengthy and, by his own admission, sometimes "meandering" engagement with the method. But what his main discussion lacks in clarity, his

96 Mink, "Some Notes," 7.

97 Ibid. It should be added that these threshold values were employed when Mink was still using a graph-theoretical approach that did not allow for philological assessment in later stages. Personal communication with Mink (May 2, 2014).

98 Ibid., 8.

99 Ibid., 2.

100 Ibid., 11–12; emphasis added.

conclusion makes up for in its frank assessment of the method as a complete failure. He lists no less than fourteen "serious mistakes" of the method before concluding that he does not think the CBGM "is of any value for establishing the text of the New Testament."[101]

To be sure, it is not always easy to follow Alexanderson's complaints as he is frequently imprecise and unclear in his judgments. In some cases, his objections are, like others, based on misunderstanding. For example, his claim that, in the CBGM, "contamination is underestimated" and coincidental agreement is "overestimated"[102] contradicts Mink's own second principle of parsimony as explained in the next chapter. In fact, it is not clear that Alexanderson has adequately grasped what coincidental agreement is given that in several places he treats it in total opposition to contamination. In the same vein, he claims that a coincidental reading is one that "does not come directly from an exemplar."[103] Neither is the case since coincidental agreement only means an agreement between two or more witnesses that is not genealogically significant *for them*. Whether such an agreement is genealogical significant in other ways is another matter entirely. The confusions aside, Alexanderson raises legitimate questions, some of which we have already encountered. Like Jongkind, he questions the statistics at the foundation of the method going so far as to deem them "of no value"; like Epp he thinks that the number of variants that determine ancestry are precariously narrow; he says that Mink's use of parsimony is "not applicable"; and he is troubled that the CBGM treats all variants equally.[104] These issues will be considered in greater detail in what follows.

2.7 *Other Reactions*

Aside from the scholars just mentioned, others have interacted with the CBGM more briefly. In his work on Galatians, for example, Stephen Carlson surveys the CBGM alongside other text-critical methods and concludes that, despite its overlap with his own aims, it is unfit for the task.[105] His reason is that, while the CBGM's rigor may help it to "reflect the authorial text better," the fact that it has "largely foregone a detailed reconstruction of the history of the text" makes it unsuitable for his goal of attaining both.[106] Thus Carlson can be

101 Alexanderson, *Problems*, 116–117.

102 Ibid., 116.

103 Ibid., 103, cf. 74–75, 92–94.

104 Ibid., 116.

105 Stephen C. Carlson, *The Text of Galatians and Its History*, WUNT II, 385 (Tübingen: Mohr Siebeck, 2015), 39–43.

106 Ibid., 43, 44. This view is restated in Stephen C. Carlson, "Comments on the Coherence-

included with those who question the CBGM's value for helping us understand textual history.[107]

Stanley Porter is another scholar who has registered complaint against the method.[108] Although some of his criticisms are too brief for clarity (for example, what does it mean that the CBGM is "still based on a number of assumptions that emerge as Mink outlines his approach"?), others range from the vagueness of the definition of "initial text"; the CBGM's treatment of all variants alike; and the unimpressive number of resulting changes to the text. As with others, some of Porter's criticisms are based on misunderstanding. With the last criticism, for example, he counts only two changes between the ECM and the NA27 because he is, in fact, referencing a comparison of the NA27 to the first installment of the ECM (James)—the only installment *not* to use the CBGM! Likewise, his point that the CBGM "fails to define coherence as other than a statistical result in terms of percentage of similarity" appears to miss that there are three types of coherence within the CBGM and that only one of them is defined by mere similarity.[109] Other problems are found in Porter's failure to note the CBGM's crucial distinction between text and manuscript, his statement that the CBGM works with all variants "from all of the manuscripts" when it is only a selection and, most seriously, his belief that the CBGM "works from the notion that variants appear only once but are then copied" which is quite the opposite of reality.

Finally, J.K. Elliott has interacted with the new method mostly in passing in his numerous reviews of the ECM over the years. He has generally reserved judgment on the method as such but does say that the arrival of the ECM2

Based Genealogical Method," *TC* 20 (2015): 1–2, http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-Carlson.pdf.

107 Another author who fits this camp is Yii-Jan Lin who describes the CBGM as generally uninterested in history. See her book *The Erotic Life of Manuscripts: New Testament Textual Criticism and the Biological Sciences* (Oxford: Oxford University Press, 2016), 133–138. This point will be revisited in chapter five.

108 Stanley E. Porter, *How We Got the New Testament: Text, Transmission, Translation*, Acadia Studies in Bible and Theology (Grand Rapids: Baker Academic, 2013), 32–33 (esp. n. 74), 59; Stanley E. Porter and Andrew W. Pitts, *Fundamentals of New Testament Textual Criticism* (Grand Rapids: Eerdmans, 2015), 89–90, esp. n. 2.

109 Porter, *How We Got the New Testament*, 32–33 n. 74. The misunderstanding appears again when Porter says that he prefers the term "cohesion" to "coherence" because it indicates "the textual indices that create a text and hold it together" (pp., 59–60 n. 158). Judging by the application of such "cohesion" in Porter and Pitts's *Fundamentals* (pp. 130–132), it is not clear that Porter has understood what the CBGM means by coherence; his own notion of cohesion has nothing to do with it.

marks our chance "to assess its [the CBGM's] effectiveness as a text critic's tool in practice."[110] But Elliott himself has not yet offered such an assessment.[111]

Along with these reactions to the CBGM, mention should also be made of the more general impression that seems to be shared by many. The single best image that captures this impression is, without a doubt, that of the "black box," a complex and mysterious device whose internal workings are known only to a small group of the initiated. Thus Carlson: "as an outsider to Muenster and Birmingham, I have to admit that the CBGM looks like a mysterious black box whose inner workings seem inscrutable,"[112] and James Leonard: "it has become a regular observation that only a handful of scholars outside of the Münster Institut really understand it."[113] Judging from personal experience, this expresses the dominant sentiment of many who have become acquainted with the method however briefly.

3 Conclusion

Over the last thirty years the CBGM has experienced remarkable growth and development. What began from attempts to locate groups of witnesses in the Catholic Epistles has developed into an "indispensable tool"[114] for the editors of the most widely used critical editions of the Greek New Testament. But the explanations of the method and the reception of it show that there is a need for a much more thorough investigation of its principles, procedures, and proper use. In particular, there are three concerns that emerge from the preceding survey.

In the first instance, questions have been raised about whether the CBGM is beneficial for reconstructing what the editors call the "initial text." One scholar

110 J.K. Elliott, "Review of *Novum Testamentum Graecum: Editio Critica Maior* (2nd Edition)," *JTS* 64, no. 2 (2013): 637.

111 In another review, he says of various new genealogical methods, including the CBGM, that "readers more computer-savvy than this reviewer will be better placed to make a comparative study of the different methodologies" ("Book Notes," *NovT* 58, no. 4 [2016]: 429–431). In his review of the ECM, Peter Head likewise says the method is "difficult to summarise" and forgoes any complete evaluation ("*Editio Critica Maior*: An Introduction and Assessment," *TynB* 61, no. 1 [2010]: 131–152).

112 Carlson, "Comments," 1.

113 James M. Leonard, "Review of *The Textual History of the Greek New Testament*," *RBL*, December 2012, 5, http://www.bookreviews.org/pdf/8381_9175.pdf.

114 ECM IV/1.4, 35*, 37*.

(Alexanderson) concludes that it has little use at all for this purpose while others (Carlson, Jongkind) are much more optimistic, concluding that this is actually where the method is most promising. Several other questions can be subsumed under this larger heading of the method's use for establishing the initial text. One is what exactly this initial text is. Another is whether the CBGM is as friendly and open to practitioners of other text-critical methods. In other words, is the CBGM a "meta-method" as its designer claims? There is also a question of whether the CBGM's frequent use of textual agreement to detect non-genealogical agreement involves circularity. Finally, we know that the editors claim the method can improve our ability to study the frequency with which scribes made particular errors. If so, this would prove to be a major boon to our ability to identify (and so correct) such error in difficult cases. This question is significant enough that answering it deserves a separate chapter. Each of these issues will be addressed in Part Two of this study.

The second and, arguably, most controversial issue that must be addressed is the relationship of the CBGM to history. This is an issue that surfaced both in the survey of the method's development and in the response from text critics. The question is whether the method can tell us about the text's historical development and, if so, how. We have seen that Mink denies that the method offers any simple or direct representation of textual history but still seems to think it has some value for elucidating such history. How it does this remains murky. To answer this, we need a known historical relationship with which to test the CBGM. We have such a relationship in the case of the so-called Harklean Group and the Byzantine text. This will be an especially fruitful test because Jongkind has offered it as a case where the CBGM fails to render history accurately. This will occupy us in chapter five. Following this, there is the question of which variants should be trusted to provide reliable genealogical information. This is a question that has plagued genealogical methods from the very beginning and, in light of the CBGM's promise to provide new tools for answering it, it needs to be considered as part of any evaluation of the method.

Finally, there remains a pressing need to clarify and explain the method. As seen in this chapter, the CBGM has been the subject of not infrequent misunderstanding. The problem is clearly acute when it affects not only one of the ECM's own editors but also the publisher's official "user's guide" to the edition that is, in many ways, the method's standard bearer (NA28). Some of the responsibility for this must lie with those who have engaged the method but it does not stop there. Anyone who has read Mink's descriptions will know them as both dense and demanding. Moreover, we have seen that Mink's own conception of the method has changed over time. Add to this the fact that the

method was progressively applied to the first edition of the ECM and it is not hard to see why the current confusion has sometimes led to anxiety and even mistrust of the method. Because of this situation, there is a pressing need for a fresh explication of the method, one that clearly but still accurately lays out its purpose, scope, basic principles, procedures, and its use on the Catholic Epistles. In addition to serving as a corrective, such a restatement of the method is necessary to avoid criticizing a misrepresentation. With those goals in mind, we turn to the next chapter.

CHAPTER 2

The CBGM in Theory and Practice

The previous chapter has traced the development and reception of the CBGM from its beginnings in the 1980s up through its mature use in the ECM2. By the time this second edition was published in 2013, the CBGM had become indispensable to the editors. This rising prominence gave rise to the need to explain the method to those outside of Münster. But unfortunately, through a combination of the method's own complexity and the density of some of Mink's most important essays, these explanations have not always succeeded in clarifying the method. The result has been that even seasoned textual critics have struggled to understand it properly. As others have noted, the CBGM is not easy to explain briefly.[1] Nevertheless, the method must be understood correctly in order to evaluate it. To that end, this chapter aims to do the seemingly impossible: explain the CBGM clearly but also thoroughly and accurately. Such an explanation will prepare the way for our own evaluation and may even prove useful to those put off by the method's complexity. A burden in this chapter is to present the method at its very best in an effort to discourage bias. In that vein, the reader is reminded that description should not be taken as endorsement in this chapter.

The chapter unfolds in two parts. The first part describes the principles and procedures of the method. Here we consider what assumptions ground the method, what the different types of coherence are and how they function, what the three types of stemmata are, and how and why textual flow diagrams are used for investigating genealogical coherence. This section is the more abstract of the two and may, for that reason, require more effort on the part of the reader. But grasping these features of the method is key to understanding how it works and how it has been used to edit the New Testament text. The second part of the chapter turns from a description of the method to its application in the Catholic Epistles. In this section, we consider how the CBGM has changed

1 Eldon J. Epp, "Textual Clusters: Their Past and Future in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 550; Peter M. Head, "*Editio Critica Maior*: An Introduction and Assessment," *TynB* 61, no. 1 (2010): 143; Gregory R. Lanier, "Sharpening Your Greek: A Primer for Bible Teachers and Pastors on Recent Developments with Reference to Two New Intermediate Grammars," *Reformed Faith & Practice* 1, no. 3 (2016): 88–155.

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the editors' practice of reasoned eclecticism and how this has affected specific textual decisions. We discuss four examples where the editors have changed previous decisions as a direct result of their use of the CBGM. Such cases illustrate how the CBGM comes to bear on actual textual variants and, in lieu of the once-promised textual commentary on the ECM, they provide a small window on the CBGM's influence on the text of our critical editions.

1 Understanding the CBGM

1.1 *Basic Principles*

1.1.1 Purpose

The CBGM is first and foremost a genealogical method and so it shares similar goals with other such methods. These goals are to help elucidate the development of a textual tradition and to help reconstruct the starting point of that development.[2] The importance of genealogy for reconstructing the text of the New Testament is well captured by Westcott and Hort in their second principle of textual criticism: "ALL TRUSTWORTHY RESTORATION OF CORRUPTED TEXTS IS FOUNDED UPON THE STUDY OF THEIR HISTORY, that is, of the relations of descent or affinity which connect the several documents."[3]

In a tradition where each witness has been copied from a single exemplar, reconstructing manuscript relationships can be achieved by careful observation of what are known as "indicative errors," the principle being that agreement in such error implies agreement in origin.[4] The problem for the New Testament, as Westcott and Hort knew well, is that its manuscripts were not always copied from a single exemplar. The result is a significant amount of mixture or

2 The exact nature of this "starting point" will be discussed in detail in the next chapter. For now, readers are reminded that the starting point achieved by traditional stemmatics is not necessarily the author's original text. See Paul Maas, *Textual Criticism*, trans. Barbara Flower (Oxford: Clarendon Press, 1958), 2–3; Günther Zuntz, *The Text of the Epistles: A Disquisition upon the Corpus Paulinum*, Schweich Lectures (London: Oxford University Press, 1953), 14.

3 B.F. Westcott and F.J.A. Hort, *The New Testament in the Original Greek: Introduction, Appendix*, 2nd ed. (London: Macmillan, 1896), 40; emphasis original. Although Hort is known to have penned this introduction, I refer to both authors throughout in order to reflect Hort's concern that Westcott's contribution to their thinking be represented (see ibid., 18).

4 Maas, *Textual Criticism*, 42. For the most up-to-date introduction to this method, see Paolo Trovato, *Everything You Always Wanted to Know about Lachmann's Method: A Non-Standard Handbook of Genealogical Textual Criticism in the Age of Post-Structuralism, Cladistics, and Copy-Text*, Storie e linguaggi (Padova: Libreriauniversitaria.it, 2014).

contamination between them. Such contamination can have the effect of inverting historical relationships in a stemma constructed on the principle just noted.[5]

Despite the problem of contamination, New Testament scholars have not altogether abandoned the search for genealogical relationships but it has led them to modify their approach. This has usually taken the form of either restricting the search to a small selection of manuscripts or to focusing on relationships of groups of manuscripts instead of individual manuscripts. In the case of small selections of manuscripts, valid use has been made of traditional stemmatics in cases like "family 1" and "family 13" in the Gospels.[6] In the case of relating textual groups to each other, the stemmatic method was applied most famously by Westcott and Hort to their various "texts" (Alexandrian, Western, Syrian, Neutral) and by Günther Zuntz in less strict fashion to the Pauline Corpus.[7] Today, most New Testament students are comfortable thinking of the text's history in terms of the major "text-types": Alexandrian, Western, and Byzantine with the latter deriving in some fashion from the former two.

What initially sets the CBGM apart from these previous attempts is its scope and specificity. Unlike the examples from families 1 and 13, which account for around a dozen witnesses each, the CBGM has been applied in James to the complete text of 164 witnesses.[8] Unlike Westcott and Hort and Zuntz, the CBGM largely forgoes the attempt to group witnesses in its delineation of their relationships. Instead, it allows each witness to take its own position in relation to every other one.[9]

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5 Westcott and Hort, *Introduction*, 47–49. For good discussions of the problem, see Michael W. Holmes, "Working with an Open Textual Tradition: Challenges in Theory and Practice," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 70–74; E.C. Colwell, "Genealogical Method: Its Achievements and Its Limitations," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 68–69.

6 Amy S. Anderson, *The Textual Tradition of the Gospels: Family 1 in Matthew*, NTTSD 32 (Leiden: Brill, 2004); Alison Welsby, *A Textual Study of Family 1 in the Gospel of John*, ANTF 45 (Berlin: Walter de Gruyter, 2013); Didier Lafleur, *La Famille 13 dans l'évangile de Marc*, NTTSD 41 (Leiden: Brill, 2013).

7 Westcott and Hort, *Introduction*, 178–179; Zuntz, *Text of the Epistles*, 9–11.

8 Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 147.

9 Ibid., 148. For a similar move away from text-types in Old Testament textual criticism, see

The use of the term "witness" up to this point requires us to note one more very important distinctive of the CBGM. Unlike past methods, the CBGM consistently distinguishes between the texts of manuscripts (i.e., witnesses) and the manuscripts themselves and it is only concerned to relate the former.[10] This important distinction follows from the fact that a manuscript's text may be much older than its ink and parchment, a point made memorable in Giorgio Pasquali's well-known phrase *recentiores non deteriores*, meaning that younger manuscripts are not necessarily inferior.[11] The decision to focus on texts also follows from the belief that there are simply too many missing manuscripts to ever reconstruct the relationships of manuscripts themselves in a *stemma codicum* for the entire Greek New Testament.[12]

Despite these important differences (and others that will be explored in what follows), the goals of the CBGM remain similar to other genealogical methods insofar as it attempts to "establish a comprehensive hypothesis for the genealogical structure of the textual tradition" and to "examine the validity of textual decisions."[13] Both of these goals are designed to contribute to our understanding of textual history and reconstructing the starting point of that history.

Emanuel Tov, *Textual Criticism of the Hebrew Bible*, 3rd ed. (Minneapolis: Fortress, 2012), 157–160.

10 Matthew Spencer, Klaus Wachtel, and Christopher J. Howe, "The Greek Vorlage of the Syra Harclensis: A Comparative Study on Method in Exploring Textual Genealogy," *TC* 7 (2002): §14, http://rosetta.reltech.org/TC/v07/SWH2002/; Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 48. Cf. Holmes, "Open Textual Tradition," 74.

11 Pasquali's principle is explained in *Storia della tradizione e critica del testo*, 2nd ed. (Florence: Le Monnier, 1952), 43–108. Richard Simon (1638–1712) made this same distinction for the New Testament as did J.J. Griesbach (1745–1812). See Jacques le Brun, "Meaning and Scope of the Return to Origins in Richard Simon's Work," *TrinJ* 3, no. 1 (1982): 62 and Griesbach's *Prolegomena* (§3.15): "the *age* of witnesses is not to be judged only, or even principally, from the antiquity of the parchments" (Aetas *testium non unice nec praecipue judicanda est e membranarum vetustate*). For this latter reference, I am indebted to Peter M. Head and Philip Satterthwaite, *Method in New Testament Textual Criticism: 1700–1850* (Peter Lang, forthcoming).

12 On the impossibility of constructing a *stemma codicum*, see Mink, "Contamination, Coherence, and Coincidence," 202; idem, "Problems," 24.

13 Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (Münster: INTF, 2009), 10, http://www.uni-muenster.de/INTF/cbgm_presentation/download.html.

1.1.2 Scope

At this point we should point out that the scope of the CBGM is limited to a key selection of continuous-text Greek manuscripts for the Catholic Epistles. For James, their number is 164; for the entire Catholic Epistles, 123. This is out of a total of about 552 Greek manuscripts which are extant for the Catholic Epistles.[14] Although (as we will see) any evidence can influence how the editor determines the relationships of readings, the CBGM itself does not currently include data from versions, patristic sources, lectionaries or other witnesses such as inscriptions, ostraca, amulets or the like. Thus, what follows applies only to these Greek witnesses.

1.1.3 Fundamental Principle

The fundamental principle of the CBGM is that *the relationships between witnesses can be derived from the relationships of their readings*.[15] If a textual tradition has two witnesses, *x* and *y*, and if the variants of *y* can be shown to derive from the variants of witness *x* in all places where they diverge, then it follows that witness *y* is descended from witness *x*.[16] But this basic principle can be stated more accurately. Because a "witness" in the CBGM is simply the totality of its variant readings, one could just as well say that the fundamental principle of the CBGM is that the relationship between witnesses *is* the sum of the relationship between their readings. Stating the principle this way helps clarify how the CBGM can move between these such that variant relationships determine witness relationships and then these same witness relationships can be used to re-examine individual variant relationships. The circle that is implied by this process, in Mink's opinion, "cannot be avoided, but it has to be controlled."[17] Within the CBGM, the unpredictability of the intricate relationships of witnesses and the sheer complexity of procedures "precludes

14 For the numbers, see Mink, "Contamination, Coherence, and Coincidence," 147.

15 Spencer, Wachtel, and Howe, "Greek Vorlage," § 13; Mink, "Contamination, Coherence, and Coincidence," 142, 150–151. The same principle is explored in detail in Margot van Mulken, "The Manuscript Tradition of the *Perceval* of Chrétien de Troyes: A Stemmatological and Dialectological Approach" (Ph.D. diss., Vrije Universiteit, 1993), 49–71, esp. 50, 55.

16 The CBGM defines a "variant" as a reading that is logically and grammatically possible. This essentially excludes nonsense readings and most spelling differences. See Mink, "Problems," 28. This is discussed in more detail in chapter six.

17 Mink, "Problems," 25. As D.C. Greetham says of the identification of spurious readings by Zenodotus at the foundation of the Alexandrian library, "Clearly, this [identification of spurious material] was circular reasoning, and it is a charge that, in one way or another, textual scholarship has never entirely escaped" ("A History of Textual Scholarship," in *The Cambridge Companion to Textual Scholarship*, ed. Neil Fraistat and Julia Flanders

consistent bias" and "reduces circularity."[18] An example of the circular use of the CBGM is discussed with respect to Jas 2.3 in §2.3 below.

1.1.4 Principles of Parsimony

When comparing only two witnesses to each other, establishing genealogy based on variants is fairly simple. But when dealing with as many as 164 witnesses, as is the case in James, the situation is much more complex. If a witness has multiple other witnesses that could potentially be deemed ancestors (textually speaking), how does one decide the ancestry? Witness 1611, for example, has eighty-six potential ancestors listed in the CBGM.[19] A genealogy that presented all eighty-six of these as ancestors in the global stemma would certainly be comprehensive but it would hardly be helpful. Of course, all witnesses are related to each other *somehow* by virtue of their being "New Testament" manuscripts. But the real value of any genealogical method is in sharpening the relationships between witnesses by *excluding* direct relationships wherever possible. Since the CBGM is attempting a hypothetical genealogy, the solution to multiple possible ancestors is to seek the simplest hypothesis among the many that can account for the same data. This preference for the simplest hypothesis is known as "parsimony" and, within the CBGM, it has "the highest priority" and "must be observed in all phases of the work."[20] Applied to witness 1611, it means finding the smallest combination of potential ancestors that best explains the text of 1611.

But how does the CBGM decide which combination is the best? The answer is by means of four crucial assumptions about the transmission of the New Testament.[21] These assumptions are not claimed to be true in all cases. In fact, they cannot be true in all cases. But they are said to be more often true than

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[Cambridge: Cambridge University Press, 2013], 19). Noteworthy in this regard is Pasquali's summary of Lachmann's method that "the criterion of the value of the single reading is replaced by that of the credibility of the witness" (Pasquali, *Storia*, 4; my translation).

18 Mink, "Contamination, Coherence, and Coincidence," 150.

19 As explained below, in order to be a potential ancestor of another witness in the CBGM, the first witness simply has to have more prior readings than posterior readings in relation to the other witness.

20 Mink, "Contamination, Coherence, and Coincidence," 151. For a history of the principle of parsimony, see Elliott Sober, *Ockham's Razors: A User's Manual* (Cambridge: Cambridge University Press, 2015), 4–60.

21 For detail, see Mink, "Introductory Presentation," 96–107; idem, "Editing and Genealogical Studies: The New Testament," *Literary and Linguistic Computing* 15, no. 1 (2000): 52; idem, "Contamination, Coherence, and Coincidence," 151–155.

false and they become absolutely necessary in certain stages where competing explanations exist.

1. *A scribe typically copies his source with fidelity*. This first principle is, at one level, to state the obvious.[22] If scribes had copied their sources with infidelity more often than not, there would be no identifiable textual tradition to discuss.[23] But there is additional evidence for this principle in the overall high level of agreement among witnesses of the Catholic Epistles.[24] In the collation of 123 witnesses, the two that disagree most frequently with each other still agree at 77.9 percent of the 2,819 variant passages in the Catholic Epistles where they can be compared.[25] This high level of overall agreement suggests that scribes largely succeeded in their attempts to copy faithfully. For the CBGM, this leads to the conclusion that textual agreement can be used to determine textual relationship. The more two witnesses agree with each other overall, the more likely that they should be closely related in the stemma.
2. *When a scribe varies from his main source, it is more likely that he has done so by reference to an additional source than it is that he has resorted to his own ingenuity*. Although the first principle of parsimony stated that scribes typically copy their source with fidelity, the need for textual criticism exists because they sometimes failed. This second principle concerns such failures. When disagreements between witnesses occur, the editor is faced with a choice: either assume that the scribe has failed to faithfully copy his only source or assume that he has faithfully copied

22 Thus, Vinton Dearing says that "it seems intuitively obvious, however, that most common [i.e., shared] readings will have resulted from copying, because the production of common readings is the whole purpose of copying." See his "Computer Programs for Constructing Textual Stemmas on Genealogical Principles: The Theoretical Basis of PRELIMDI and ARCHETYP," in *La pratique des ordinateurs dans la critique des textes* (Paris: Éditions du Centre national de la recherche scientifique, 1979), 117.

23 Hence David Parker's point that "if two texts differed more than they agreed, one would have to question the view that they represented the same work" (*Textual Scholarship and the Making of the New Testament: The Lyell Lectures* [Oxford: Oxford University Press, 2012], 68).

24 The further claim (Mink, "Contamination, Coherence, and Coincidence," 152) that this is supported by the repeated occurrence of witnesses sharing the same reading as their closest potential ancestor is problematic. Since "closeness" in the CBGM *is* agreement, this amounts to a tautology: witnesses agree most often with the ancestors they agree with most often.

25 Mink, "Contamination, Coherence, and Coincidence," 157 n. 25.

another source to which he had access. Except where evidence points to the contrary, the second principle of parsimony prefers the latter hypothesis. One reason for this is that when witnesses in the CBGM disagree with their closest potential ancestor, they usually still agree with another close possible ancestor. In short, another likely source is often close at hand. As before, exceptions are always allowed. But in keeping with the first principle, this means that the CBGM has a built-in preference for contamination over against simple textual change. This will become important in the construction of the global stemma as discussed below.

3. *Scribes use few rather than many sources*. This third assumption relates to the problem of multiple ancestors already noted. Rather than having eighty-six ancestors for witness 1611, we should search for the fewest number of ancestors that are needed to explain its text. This preference is based not only on the desire for a simpler hypothesis (where simpler means fewer posited relationships), but also, importantly, on the realities of scribal copying. It is unlikely that scribes ever used more than a few manuscripts at the same time to copy a single text.[26] We will return to this point in due course.
4. *A witness will be closely related to any additional sources*. This final assumption is the same as the first one but now applied to cases of contamination. If scribes copied their sources with fidelity, then, when they did use more than one, we should expect these additional sources to also be similar to the resulting witness. This principle is especially important as it allows the CBGM to identify specific sources of contamination where there are many possibilities. As we will see in chapter five, violation of this last principle in the history of transmission can result in an insoluble problem for the method.

Any set of data open to multiple interpretations requires principles to adjudicate between competing hypotheses. In the CBGM the preceding four assumptions about the textual tradition guide the user of the method in deciding between competing hypotheses. In this, they provide principles for determining parsimony. As we will see below, these principles are essential to the CBGM's ability to construct its comprehensive or global stemma, one that incorporates all the editors' genealogical decisions.

26 Maas makes the same point in *Textual Criticism*, 8.

1.2 *Procedures*

1.2.1 Overview of the Process

Before diving further into the details of the CBGM, it may be helpful to give an overview of the method, showing the steps from start to finish. Each of these steps will be discussed in more detail as we proceed.

1. The first step is to draw up as many local stemmata as possible for the corpus being edited. A local stemma is simply the editor's idea of how readings relate to one another at any given point. Where three readings are extant, they can be related in the order they are thought to have developed such as (*a*) Ἰησοῦς → (*b*) Ἰησοῦς Χριστός → (*c*) Ἰησοῦς Χριστὸς κύριος ἡμῶν. These can be related using any reasoning the editor finds convincing. The power of the CBGM lies in the ability of the computer to track where every individual witness is located in relation to every other witness in every single local stemma. In this way, the genealogies of readings are aggregated as genealogies of witnesses.
2. Based on this first round of local stemmata, the computer can begin to show the ratio of prior and posterior readings between any two witnesses. For example, witness *x* and *y* may disagree at ten places. If the relationship in eight of these cases is $x \rightarrow y$, then the editor may want to use this information to help decide the relationship of their readings in the remaining two places. Alternatively, if only one of the ten had been decided as $y \rightarrow x$ and the other nine the reverse, then the editor will probably want to revisit that one decision. In this way, the sum of the relationship can help illuminate the parts.
3. When the user is satisfied with the local stemmata, the next step is to locate the smallest number of ancestors needed to explain the text of each manuscript. Since a manuscript's text can be explained in multiple ways, the principles of parsimony are now employed. The relationship of each witness to its possible ancestors are known as "substemmata" in the CBGM. When the smallest number of possible ancestors has been determined, the substemma is said to be "optimal." For example, witness *x* may have four possible ancestors (*v, w, y, z*) but the principles of parsimony may show that *v* and *w* unnecessarily complicate the substemma. In that case, the best option is to say that only $y + z \rightarrow x$ rather than $v + w + y + z \rightarrow x$.
4. By narrowing the number of possible ancestors for each witness as much as possible in step three, it becomes possible to combine all these substemmata into something larger, known as the global stemma. In the global stemma, the reduced number of relationships determined in the

> substemmata are all clearly visible. In other words, all the essential relationships are preserved and presented in this stemma. This has the effect of confronting the editor with the overall ramifications of the textual decisions made at the level of the local stemmata. What would otherwise be nearly impossible for the human mind to keep track of is now clearly visible in diagram form. This global stemma can then be used to revisit any remaining difficult decisions, to check the consistency of earlier decisions, or to study the historical development of the text in more detail.

This, then, gives a snapshot of the CBGM from start to finish. Having seen the whole, we can now consider specific parts in greater depth.

1.2.2 Three Types of Stemmata

As just seen, the CBGM works with three different types of stemmata. A stemma, much like a family tree, is simply a representation of relationships. In Lachmannian stemmatics, the stemma displays the relationships of manuscripts (i.e., a *stemma codicum*). But, as noted, the CBGM tries to relate their texts instead. The starting point for relating texts in the CBGM and thus the most important type of stemma is the local stemma. The other two are built on it.

1.2.2.1 *Local Stemmata*

The notion of a local stemma is hardly new to the CBGM,[27] but the use made of it is. As Mink explains, "It is valid as a principle that if no genealogical data have been put in, there is *no* genealogical output."[28] In the case of the CBGM, all the *directed* genealogical data are "put in" through the local stemmata. Without these, there is no information about the direction of change between variants and therefore no directed relationship between witnesses. Based on the number of variants involved, local stemmata can range from the simple to the complex. Where a particular reading is deemed unexplainable, its genealogy can be left undetermined either indefinitely or until pertinent data

27 The concept is found already in Kurt and Barbara Aland, *The Text of the New Testament: An Introduction to the Critical Editions and to the Theory and Practice of Modern Textual Criticism*, trans. Erroll F. Rhodes, 2nd ed. (Grand Rapids: Eerdmans, 1989), 281; Martin L. West, *Textual Criticism and Editorial Technique Applicable to Greek and Latin Texts* (Stuttgart: Teubner, 1973), 51–53.

28 Mink, "Editing and Genealogical Studies," 53.

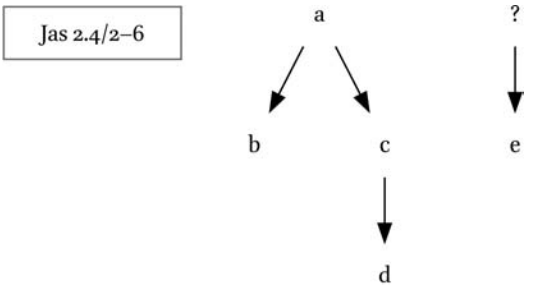

FIGURE 1 *The source for variant* e *is left undetermined by the editors*

become available. Variant *e* in Jas 2.4/2–6 (διεκριθητε) offers a case where the editors were unable to decide on a source (see Figure 1).

In practice, the majority of local stemmata are easily constructed. In many cases, the choice is between only two variants. For James, Mink reports being able to construct local stemmata for 89 percent of 761 points of variation on the first pass and 98 percent on the second.[29]

The novelty of the CBGM is in the fact that the computer is keeping track of where each witness is located in these local stemmata. In Figure 1, for example, the computer knows exactly which witnesses have variant *a* and which have variant *b*. If it were the case that every witness took the same place in relation to every other witness in all the local stemmata, then the construction of the global stemma would follow immediately. This, of course, is not the case. Instead, witnesses change their relationships to each other between places of variation and this situation creates the need to bridge the gap between the local stemmata and the global stemma.

1.2.2.2 *Substemmata*

The bridge between local stemmata and the global stemma is constructed from a second type of stemma known in the CBGM as a substemma. A substemma is simply a two-tiered genealogy that connects a single witness with a set of ancestors (see Figure 2). Where there are multiple ancestors for a witness, the substemma is therefore also a visualization of contamination.

As the number of potential ancestors for a witness increases, so does the number of possible substemmata for that same witness. In the Catholic Epistles, for example, witness 35 has eight potential ancestors (a relatively small

29 Ibid., 53–55. In personal communication, Mink reports that the ease of construction fluctuated from book to book.

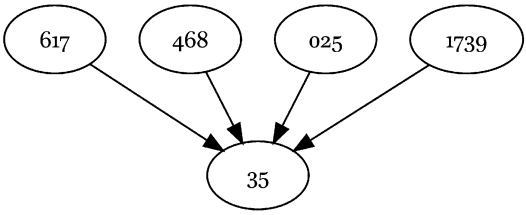

FIGURE 2 *A substemma, in this case an optimized one, for witness 35*

number) and yet just these eight allow for a total of 255 different possible substemmata.[30] With a witness like 1611 which has eighty-six potential ancestors, the number of possible substemmata balloons to more than one septillion—a one followed by twenty-four zeros!

At this point, the principles of parsimony explained above become absolutely necessary. Without them, there would be no way to produce substemmata or the global stemma. But, if scribes wanted to copy faithfully, if they used few rather than many sources, and if those sources are closely related, then it follows that the best substemma is the one that contains the fewest number of potential ancestors that either share or provide a source for the largest number of variants.[31] Whenever a substemma can explain all the variants in the descendant, the substemma is said to be "optimal." By leaving no variants unexplained, optimal substemmata ensure that the global stemma will be fully consistent with all the local stemmata. That is, there will be no relations between variants in the local stemmata that are not accurately represented in the relations between their witnesses in the global stemma.

The process of optimizing a substemma involves two steps, one done by the computer and one done by the editor.[32] In the initial step, the computer searches for every possible set of ancestors for a witness. The computer then

30 The formula is $2^n - 1$ where n is the number of potential ancestors. See Mink, "Introductory Presentation," 494.

31 Although Mink uses the language of variants being "explained" by ancestors, his description of substemmata shows that, consistent with his first principle of parsimony, he prefers that ancestors in substemmata share the variants of the descendant. Only when this is not possible does he accept that potential ancestors may "explain" the variants in the descendant by way of textual change (see Mink, "Introductory Presentation," 164–177, esp. 167, 175–176).

32 The process is explained in Mink, "Contamination, Coherence, and Coincidence," 189–201. A longer, but somewhat clearer explanation is given in Mink, "Introductory Presentation," 485–560.

TABLE 1 *Six of the 255 possible substemmata for witness 35*

GA numbers for ancestors in the substemma	Number of ancestors	Agreeing variants	Posterior variants	Variants with unknown sources	Unexplained variants
617. 424. 468. 025. 1739. 04	6	3,013	27	6	0
617. 468. 025. 1739. 04	5	3,012	28	6	0
617. 468. 025. 1739	4	3,010	30	6	0
424. 468. 1739	3	3,002	35	8	1
424. 1739	2	2,985	40	13	8
617	1	2,924	56	16	50

ranks these sets by three criteria: (1) the number of agreements between each set and the main witness (higher is better); (2) the number of variants that cannot be explained by the ancestors (lower is better); and (3) the total number of witnesses in the set (lower is better). From this selection, there may be several substemmata that "explain" all the variants. It is then up to the editor to take the second step of choosing which of these is preferable. This involves investigating a select number of variant units to adduce whether or not certain witnesses which contribute little to the substemma are really necessary. If not, they are discarded. Once this has been done, the substemma is said to be optimal.

To illustrate the process, a small selection of the total substemmata for witness 35 is provided in Table 1.[33] The first two columns list the number of witnesses in the substemma and their Gregory-Aland numbers. Columns three and four show the number of readings in witness 35 that either agree with or are posterior to the readings in at least one of the ancestors. The fifth column shows the number of variants in witness 35 that have an unknown source in the local stemmata. The final column shows the number of variants that cannot be explained by the witnesses in that substemma.

For witness 35, there are only three candidates for the optimal substemma. At this point, two of the principles of parsimony are in conflict and we must choose whether to give weight to the first and fourth (scribes copied their sources with fidelity) or the third (scribes used few rather than many sources).

33 These data reflect the CBGM version 1.0. The complete list of substemmata for 35 was provided by Klaus Wachtel and is more extensive than the selection of the same data given in Mink's "Introductory Presentation," 495.

Since both options fulfill the second principle of parsimony, resolving this conflict is the task of the editor. The goal is to see if any of the potential ancestors can be removed without affecting the substemma's optimal nature. The process starts by examining those ancestors that contribute the fewest number of agreeing variants and to see if any of these agreements could instead be accounted for using another ancestor. Thus, if the readings that witness 424 uniquely contributes to 35 by way of *agreement* (424 = 35) can instead be explained from one of 35's other ancestors by way of *derivation* ($x \rightarrow 35$), then 424 can be safely eliminated from the substemma. Since this choice now pits the second principle of parsimony (scribes use other sources more than they create readings themselves) against the third (scribes use few rather than many sources), the choice is again up to the editor. This need for repeated editorial intervention makes the process quite tedious. In chapter five we will show an alternative way that reduces this particular need for intervention entirely.

Let us consider a specific example in the case of witness 35. It happens that witness 424 uniquely contributes only one agreement with 35, the omission of the article before οὐρανοί at 2 Pet 3.10/18. Given the phonetic similarity of the article with the preceding relative ᾗ, Mink concludes that these two witnesses agree here coincidentally (i.e., non-genealogically).[34] This being the case, the omission of the article could easily have derived from any one of 35's other potential ancestors, all of which have the article here. The same conclusion was drawn about the two unique agreements between 35 and 04; both were considered explainable from other ancestors. As a result, both 424 and 04 were determined to be unnecessary to explain the text of 35. The other ancestors all contain so many agreements with 35 or agreements so unlikely to be coincidental that each one was retained. The resulting optimal substemma comprises 617, 468, 025, and 1739 and was shown above in Figure 2.

It may be noted that this same substemma could have been found simply by preferring the substemma that combines the smallest number of ancestors with no unexplained variants from Table 1. In our own global stemma in chapter five, this is precisely what has been done for the Harklean Group. In preferring to start with the substemma with the highest number of agreements, the CBGM shows a slight preference for scribal fidelity over higher contamination. Whether this is intended or not is unclear. Perhaps it should be seen as one

34 A variant of this type is said to be "non-connective" on which, see Mink, "Introductory Presentation," 528–537. This philological assessment was conveyed by Mink in personal communication (March 23, 2015).

more "undesirable [?] artifact," this one resulting from the choice to incorporate editorial intervention at every stage of the process.[35]

1.2.2.3 *Global Stemma(ta)*

The final stemma is the global stemma which is built from optimal substemmata. As such, it is the simplest (i.e., most parsimonious) hypothesis of textual development and accurately reflects every variant relationship in the local stemmata. In this sense, it is considered comprehensive. At no point is a connection in the global stemma unrepresented by a corresponding connection in a local stemma. This is given as one of the "special requirements" of the CBGM, one that gives it an advantage over "an exclusively statistical approach to stemmatology" where the overall results would not be true at all individual points.[36]

The dependence upon optimal substemmata has two further implications for the global stemma. First, it requires that multiple global stemmata are possible whenever equally good optimal substemmata exist for a witness. Similar to what was seen with multiple substemmata, the number of possible global stemmata can grow quickly where there are multiple optimal substemmata for the same witness. In practice, however, the global stemma can be constructed in parts, leaving more difficult or time-intensive sections for later.[37]

Although further work on the global stemma is promised,[38] the necessary computing power and especially the editorial time needed to optimize substemmata has meant that none yet exists for the Catholic Epistles. For now, we must be satisfied with portions of the global stemma provided in various publications to date. An example of the top portion of the Catholic Epistles is shown in Figure 3.[39] Where witnesses show no directed relationship, they are connected by a dashed line (i.e, 025 and 468).

1.2.3 Two Types of Coherence

As important as the various types of stemmata are to the CBGM, the most important concept is the eponymous one: coherence. So far we have generally used the term "agreement" as a suitable synonym for coherence but it remains to define the various types of coherence and to describe their importance

35 cf. Mink, "Problems," 76–77; idem, "Editing and Genealogical Studies," 53.

36 Mink, "Introductory Presentation," 54.

37 Mink, "Problems," 75.

38 Personal communication with Gerd Mink (November 4, 2013).

39 This is taken from Mink, "Introductory Presentation," 562. In Mink's version, colored lines are used which represent degrees of textual influence. An additional, lower portion of the global stemma is presented later in this study.

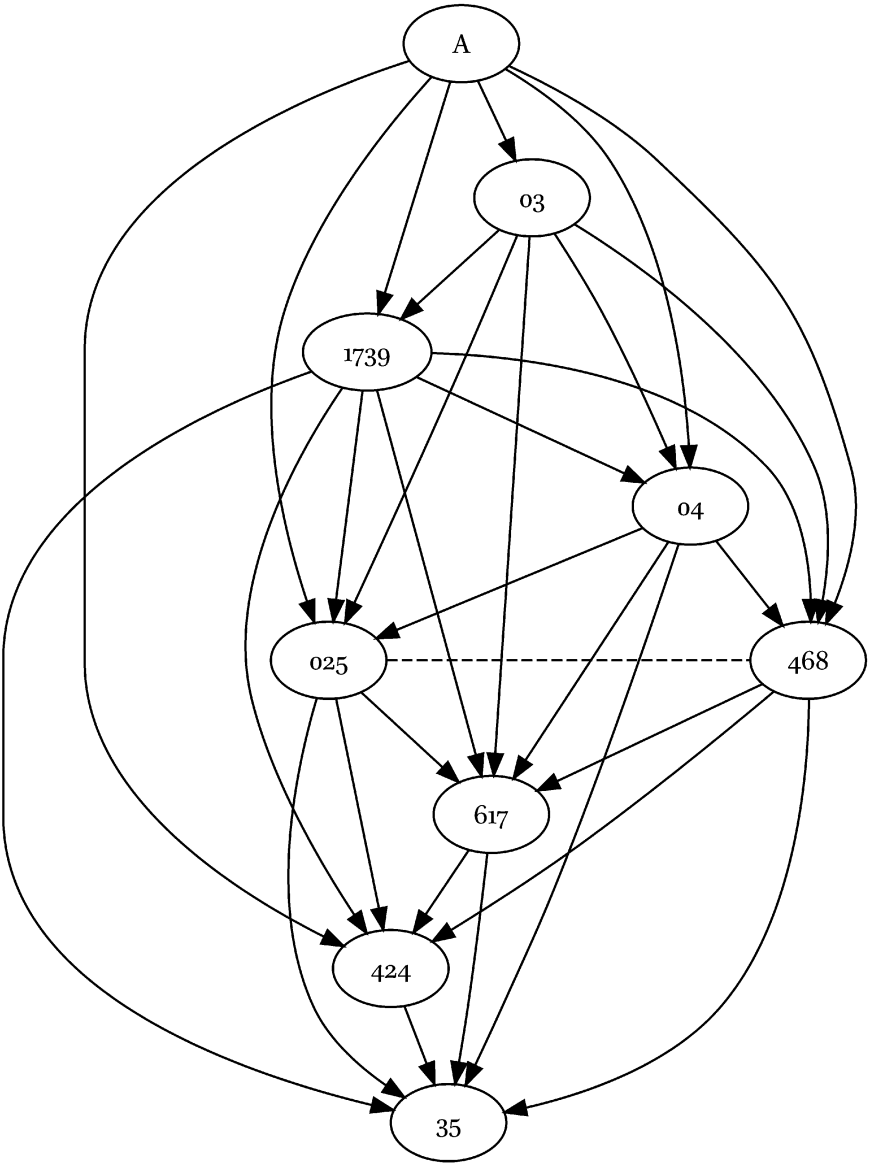

FIGURE 3 *The topmost portion of a global stemma for the Catholic Epistles*

for working in a contaminated tradition. The CBGM operates with two main types of coherence: pre-genealogical and genealogical. A third type, known as stemmatic coherence, is simply another term for the relationships in an optimal substemma and so need not detain us further.[40]

1.2.3.1 *Pre-genealogical Coherence*

Pre-genealogical coherence is the most important type of coherence. It is, in fact, nothing more than what textual critics have used for years in various types of quantitative analysis.[41] Simply put, this type of coherence is the total number of agreements between any two witnesses at all points of comparison. The unit of comparison for this measurement is not the word but the variation unit as determined by the editors. At all places where there is a variation in the collated witnesses, any two witnesses may be compared with each other. The total number of places where they agree is given as a percentage of the total number of places where they were compared.[42]

In the Catholic Epistles, for example, the collation of 123 continuous text manuscripts resulted in 3,043 places of variation.[43] In the case of 03 and 01, both witnesses are extant in 3,003 of these places and they agree in 2,613 of them, or 87.0 percent.[44] This ratio constitutes their pre-genealogical coherence in the Catholic Epistles. It is *pre*-genealogical because it tells us nothing about the specific *direction* of the relationship between them but only about their

40 For references to stemmatic coherence, see Mink, "Contamination, Coherence, and Coincidence," 144; idem, "What Is It About?"; idem, "Problems," 33; idem, "Introductory Presentation," 161–163; idem, "Contamination, Coherence, and Coincidence," 144.

41 See, for example, Thomas C. Geer, Jr. and Jean-François Racine, "Analyzing and Categorizing New Testament Greek Manuscripts," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 497–518.

42 Gerd Mink, "The Coherence-Based Genealogical Method—What Is It About?" (Münster: INTF, 2002), http://egora.uni-muenster.de/intf/projekte/gsm_aus_en.shtml; idem, "Introductory Presentation," 144; idem, "Contamination, Coherence, and Coincidence," 144, 157; Klaus Wachtel, "The Coherence-Based Genealogical Method: A New Way to Reconstruct the Text of the Greek New Testament," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 129–130.

43 More specifically, it is 3,046 for the ECM1 and 3,043 for the ECM2, but "the reduction … as a result of the apparatus revision is of minimal importance." See the preface to Gerd Mink's "Guide to 'Genealogical Queries' (Version 2.0)" (Münster: INTF, 2013), http://intf.uni-muenster.de/cbgm2/guide_en.html. The number of manuscripts was not changed.

44 See the Comparison of Witnesses module in "Genealogical Queries" version 2.0 and cf. note 50 below.

textual proximity to each other. In fact, "proximity" or perhaps "textual agreement" would have been better terms for this. In any case, the *pre-* in the term indicates that it will be used in the CBGM to help determine genealogy in later procedures.

Two features of pre-genealogical coherence are important to note at this point. The first is that pre-genealogical coherence counts all variants and counts them all alike.[45] An agreement involving the eighteen words at the end of 1John 5.7 counts exactly the same as the agreement involving just one word at the beginning of the same verse. This decision is justified on the grounds that scribes did not weigh the significance of a reading before deciding whether or not to copy it and that, in any case, there is "no way to objectively measure textual importance."[46] The validity of this choice will occupy us in chapter six.

The second important feature of pre-genealogical coherence is that, because it is based on places of variation, it can be affected by the number of witnesses collated. If only two witnesses were compared and they disagreed at only two places, the CBGM would ascribe them a pre-genealogical coherence of zero percent. If a third witness was added which disagreed with both the previous two at ninety-eight new places, the pre-genealogical coherence of the first two would jump to 98 percent (ninety-eight out of 100 places of comparison). In general, the more witnesses included in the CBGM, the more places of variation there will be, and therefore the higher the pre-genealogical coherence percentages is likely to be overall.[47]

This relativity means that we need a reference point in order to understand what constitutes high or low pre-genealogical coherence values. In the Catholic Epistles, the highest level of agreement is 99.1 percent (shared by 614 and 2412) and the lowest is 77.8 percent (shared between 1241 and 1838). The average between all possible pairs of witnesses is 87.5 percent with the median close behind at 87.3 percent.[48] If we consider the relationship of the text of Vaticanus

45 A "variant" here means, as noted, a reading that is not a spelling difference and is grammatically and logically possible. See Mink, "Contamination, Coherence, and Coincidence," 143.

46 Spencer, Wachtel, and Howe, "Greek Vorlage," § 14. Cf. Mink, "Contamination, Coherence, and Coincidence," 145, 152.

47 We say "in general" because, at a certain point, adding Byzantine witnesses adds fewer and fewer new places of variation. For the negligible difference the editors found by including an extra forty-one manuscripts for James, see Mink, "Contamination, Coherence, and Coincidence," 147.

48 These numbers are from Gerd Mink, "Guide to 'Genealogical Queries' (Version 2.0)" (Münster: INTF, 2013), § d, http://intf.uni-muenster.de/cbgm2/guide_en.html and differ only slightly from those given in his "Introductory Presentation," 280.

TABLE 2 *A matrix of pre-genealogical coherencies (as percentages) for six hypothetical witnesses (1–6); the highest pre-genealogical coherencies for each witness are set in in bold italics*

	1	2	3	4	5	6
1	–	80	***98***	80	80	80
2	80	–	80	***95***	80	80
3	***98***	80	–	80	80	80
4	80	***95***	80	–	93	80
5	80	80	80	***93***	–	90
6	80	80	80	80	***90***	–

(03) and Sinaiticus (01), we find that they have a slightly below average agreement of 87.0 percent.

As noted, the nature of pre-genealogical coherence is not new. It is simply a more expansive version of traditional quantitative analysis used for many years by New Testament textual critics. Its novelty within the CBGM is how it is used. Apart from its role in producing optimal substemmata as seen above, its most prominent use is in the construction of local stemmata. In particular, pre-genealogical coherence offers new evidence for determining whether and even how variants are related. In the first case, the level of pre-genealogical coherence can be used to suggest that a particular agreement is coincidental. The principle is simple enough: an agreement in a type of variant that is easily introduced by scribes is more likely to be identified as coincidental where the witnesses that share it have a low pre-genealogical coherence. Conversely, where witnesses have a high pre-genealogical coherence, even agreements in trivialities are likely to be genealogically significant. We will explore this use in more detail in chapter three.

But pre-genealogical coherence can also be used to understand variant relationships. To illustrate this use, we can imagine six witnesses (1–6) with varying levels of agreement between them. We could display these levels of agreement (i.e., the pre-genealogical coherence) in a matrix as shown in Table 2, with the closest relative for each witness in bold italics. The table should be read from left to right.

The average agreement in our fictitious textual tradition is 83.7 percent, slightly lower than what we find in the Catholic Epistles. Supposing our six witnesses attest three different readings (*a*, *b*, and *c*) at a point of variation, it is possible to use the agreement levels between the *witnesses* to study the

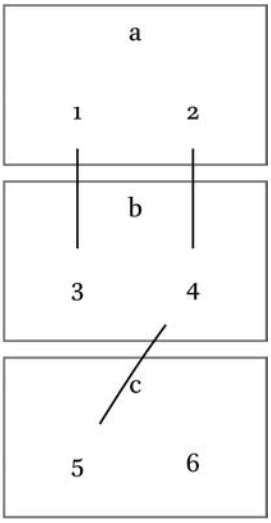

FIGURE 4
The pre-genealogical relationships from Table 2 applied to a variation with three readings (a, b, c)

most likely relationships between their *readings* at this particular point. This can be done by drawing undirected connections between the closest witnesses of each reading (see Figure 4).

Already the data suggests some routes of textual change as more likely than others. In this case, the pre-genealogical coherence suggests that readings *a* and *c* may not be directly related. This is because the witnesses that attest them are not as closely related to each other as they are to other witnesses. Likewise, the fact that witnesses 3 and 4 are not connected suggests that reading *b* may have emerged multiple times in the course of transmission. This is because 3 and 4, as witnesses, are not closely related as a whole. Importantly, none of this suggests the specific *direction* of textual change. As Mink says, answering that question "requires that the customary text-critical methods be applied."[49] In other words, pre-genealogical data does not preclude the editor's need to make a judgment; but it does *precede* that judgment insofar as pre-genealogical coherence is based purely on overall agreement between witnesses. In this it offers a new and more objective set of data for evaluating the plausibility of specific variant relationships. The relevance this has for constructing local stemmata should be obvious.

49 Mink, "Contamination, Coherence, and Coincidence," 158.

TABLE 3 *The genealogical coherence between 03 and 01 in the Catholic Epistles*

Points of comparison	Agreements	Pre-gen. coherence	03 → 01	03 ← 01	Unclear relationship	No relationship
3,003	2,613	87.0%	250	89	36	15

1.2.3.2 *Genealogical Coherence*

If pre-genealogical coherence shows that two similar witnesses are related, genealogical coherence adds the element of direction to the relationship. In doing so, it provides important additional detail to the editor. Genealogical coherence is based on the simple observation that at any point of comparison, two witnesses (*x* and *y*) can be related in one of three possible ways:

1. *x* and *y* agree
2. *x* is prior to *y* or *y* is prior to *x*
3. *x* and *y* are not clearly or directly related

This data is already available for every witness in the CBGM by way of local stemmata. When the directed relationships are combined with pre-genealogical coherence, it becomes genealogical coherence. This can be presented in tabular form such that the relationship of 01 and 03 in the Catholic Epistles, for example, can be given as it is in Table 3. This constitutes their genealogical coherence.[50]

Because 03 has more prior than posterior variants in relation to 01 where there is a clear direction, 03 is considered a *potential* ancestor for 01. Importantly, a potential ancestor in the CBGM is distinct from a stemmatic ancestor. The latter is an ancestor that is required to produce an optimal substemma whereas the former may not be needed in this way. Without the global stemma, we do not know whether 03 is also a stemmatic ancestor for 01 or not, although their genealogical coherence suggests it will be.

The natural question about genealogical coherence is what to make of the fact that a potential ancestor like 03 has readings derived from readings in its own potential descendants such as 01. The explanation from Mink is that

50 The numbers in the online module are off by four. The points of comparison are given as 2,999 which must be wrong given the absolute numbers in the other columns. The discrepancy has been corrected here but the difference is negligible.

such readings must be from another source, one that is prior to both witnesses. Almost all witnesses in the CBGM have both prior and posterior variants in relation to their potential ancestors, a reality that suggests that contamination was severe.[51] In Mink's view, the appearance of this contamination is more severe than the reality because so many manuscripts are now lost, especially in the earliest period. Were more extant, the number of posterior readings in potential ancestors would presumably not be so severe.[52]

Genealogical coherence plays its most significant role in studying variant relations and, especially in detecting possible contamination and coincidental agreement—the two major problems for stemmatics. The reason is that genealogical coherence allows for a highly detailed exploration of the relationships between witnesses at any given point of variation. Whereas pre-genealogical coherence can only show proximity between the witnesses, genealogical coherence shows textual similarity *combined with* the predominant direction of that relationship. The way that this is studied in the CBGM is through diagrams that display the flow of text between potential ancestors and descendants at specific points of variation. This brings us to the notion of textual flow which is closely related to coherence.

1.2.4 Textual Flow

The metaphor of flowing water to describe textual change is found as far back as Jerome and it has been used by textual critics ever since.[53] Within the CBGM, textual flow describes how variants in one witness are either upstream or downstream from the variants in other witnesses. In this sense, it is simply another way of speaking of genealogical coherence. Returning to 01 and 03, for example, the text of these two witnesses can be said to flow predominantly from 03 to 01 but also in many cases from 01 to 03. This information can be visually diagrammed within the CBGM at specific points of variation. In this way, it can be used in the same ways as pre-genealogical coherence but with much greater detail.

1.2.4.1 *Textual Flow Diagrams*

To illustrate, we can present the genealogical coherence between 01, 02, 03, and 35 graphically as a set of vectors. We can represent the relative strength of flow in any given direction by the darkness of the vector (see Figure 5).

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51 Ibid., 162.

52 Ibid., 155. For the same conclusion, see Barbara Aland, *Das Neue Testament in syrischer Überlieferung: 1. Die großen katholischen Briefe*, ANTF 7 (Berlin: Walter de Gruyter, 1986), 48.

53 Trovato, *Everything*, 56.

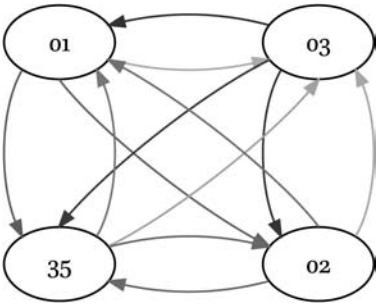


FIGURE 5
A diagram of the textual flow between witnesses 01, 02, 03, and 35

Such a diagram reflects only the places where the variants in each pair of witnesses have a clear directional relationship such that $x \rightarrow y$ or $y \rightarrow x$. In this diagram, the opacity of the vectors (or edges) reflects the ratio of readings that run in that direction. In the case of 35 and 02, for example, there is a nearly equal number of prior and posterior variants between the two witnesses. Thus, the opacity of the arrows is set to one-half. In the case of 03 and 01, however, the difference is stronger with 03 having the prior reading in 74 percent of the 339 cases where the editors have determined a clear direction of the relationship between them. Thus, the arrow from 03 to 01 is much darker. The darker arrows for each pair represents the predominant direction that text flows between them. It is this predominant flow that the CBGM uses to construct what are known as predominant textual flow diagrams.

1.2.4.2 *Predominant Textual Flow Diagrams*

Predominant textual flow diagrams are by far the most commonly displayed feature of the CBGM in explanations. Their main purpose is to study the level of coherence at particular points of variation. They are not intended—despite appearances—to be used as a stemma. The reason is that they come with two very important restrictions. The first, as the name implies, is that they show only the strongest direction of textual flow between witnesses. Thus, the flow of text in the opposing direction is visually discarded. Second, they only connect each witness with one potential ancestor. This is true regardless of how many such ancestors a witness in the diagram has in the CBGM. These two qualifications mean that predominant textual flow diagrams present a simplified picture of the total genealogical data. We will see a problem that this simplification can cause in chapter five. For now, it will be helpful to show a predominant version (Figure 6) of the same textual flow given above (Figure 5).

Here we have a single witness (03) which sits as the source of all three of the others. Only a single ancestor and a single direction of influence is given. No indication of other ancestors or opposing flows is given.

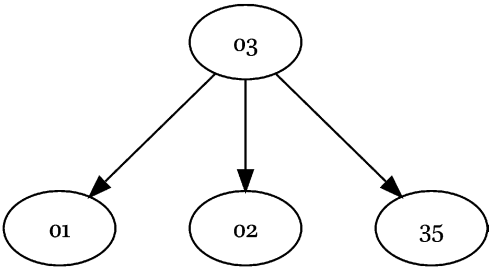


FIGURE 6
A predominant textual flow diagram for 01, 02, 03, and 35

Despite this reduction in information, these diagrams can still become quite complex. The predominant textual flow diagram of all non-fragmentary witnesses of the Catholic Epistles, for example, is shown in Figure 7. In this case, the reconstructed *Ausgangstext* (A) is treated as a hypothetical witness. Because this text is composed of the initial text at each place of variation, it has no potential ancestors and therefore it will always sit as the head of the flow.

1.2.4.3 *Textual Flow Applied to Points of Variation*

Within the CBGM the principles just outlined for constructing predominant textual flow diagrams form the basis for exploring genealogical coherence at specific points of variation. In keeping with the first principle of parsimony, the computer always tries to connect each witness with a potential ancestor that shares its same reading at the point of variation in question. In this way, the computer provides the editor with a visual overview of how well the witnesses of a particular variant agree (or cohere) amongst themselves. Where the coherence is best, the witnesses all link with a close potential ancestor with the same reading. Where the coherence is worse, some witnesses may have to be linked to a potential ancestor with a different reading. In this way, predominant textual flow diagrams are the primary way that the CBGM allows users to investigate coherence at specific points of variation.[54] This can, in turn, be useful for studying variant relationships.

As an illustration, we can consider the variation in the first words in 2 John 2. Most witnesses begin the sentence with διὰ τὴν ἀλήθειαν. But these words are omitted by nearly forty witnesses, all but one of which are minuscules. The most obvious explanation for the variation is that the words were omitted by parablepsis involving τὴν ἀλήθειαν just before. We can test this hypothesis

54 Thus the online "Queries" that produce such diagrams are referred to as "Coherence in Attestations" and "Coherence at Variant Passages." The former is a subset of the latter since a variant passage is always made up of at least two attestations.

by applying the genealogical coherence among witnesses to this particular variation using predominant textual flow diagrams. If our hypothesis is right, we should expect that a number of witnesses that attest the shorter reading will be connected to ancestors that attest the longer reading. If we find the reverse, we may need to revise our original thesis.

A predominant textual flow diagram for 2 John 1.2/2–6 is shown in Figure 8. The two boxes contain the witnesses of each of our two readings. Witnesses attesting variant *a* (the longer reading) are shown in the box on the left while witnesses attesting variant *b* (the shorter reading) are in box on the right.

The diagram shows numerous witnesses that share the same variant as their closest potential ancestor. But a significant number do not, and these relationships are marked by arrows that span the two boxes. Each box is referred to in the CBGM as an "attestation" because it includes all the witnesses that attest to one particular variant. Within the CBGM, it is possible to produce textual flow diagrams for variant units as a whole or for just a single attestation within them. The latter can be especially helpful when the variant unit diagram is complicated and difficult to read. Another way to simplify the diagram is to set the display mode to "interrelationships" which only shows us those relationships where the text changes from ancestor to descendant. For 2 John 1.2/2–6, the resulting diagram is shown in Figure 9.

This diagram provides us with a view of how often the text changes between a descendant witness and its closest potential ancestor at this point of variation. In this case, the diagram shows changes in both directions, sometimes from *a* to *b* and sometimes from *b* to *a*.

It is important to note here that we are only seeing the direction of *predominant* textual flow. For every pair (except those involving the *Ausgangstext*), there is some textual flow in the opposite direction as well. Any conclusions based on this diagram would thus need to consider not only the direction of predominant flow, but also its relative strength. In the case of witnesses 2200 and 429, for example, the predominant direction of textual flow is determined by only five points of variation. A reversal in three of these would completely reverse the direction of predominant textual flow. In that case, 2200 would no longer be a potential ancestor for 429 (being instead a descendant) and so the computer would have to search for a replacement.[55]

Since these diagrams constitute such an important part of the CBGM, it is worth observing a few more features before returning to our original question about the variation in 2 John 1.2/2–6. We can start by noting how these diagrams

55 In this case, the next closest ancestor is 1611 which happens to attest variant *b* as well.

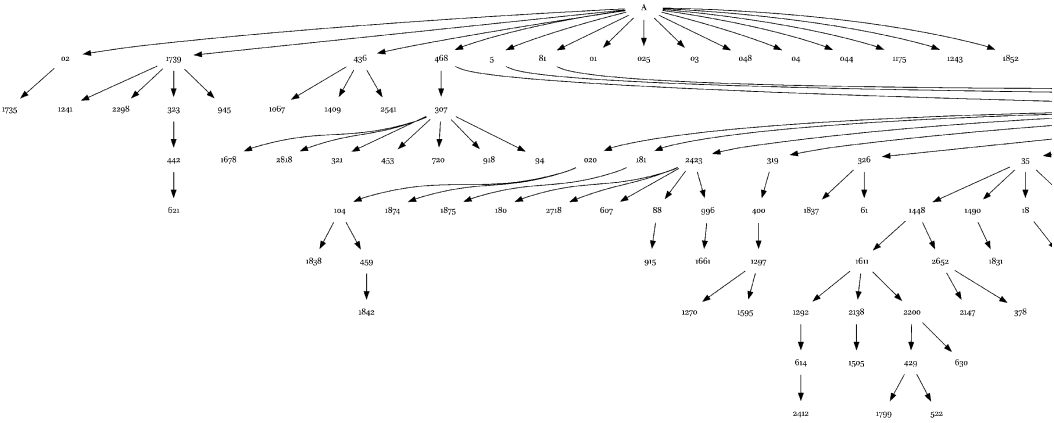


FIGURE 7 *The predominant textual flow diagram for non-fragmentary witnesses in the Catholic Epistles*

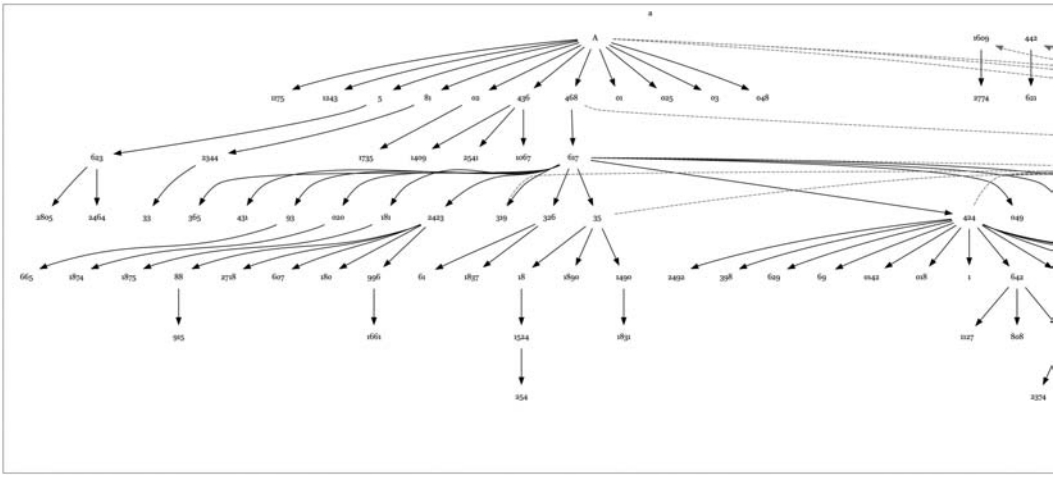
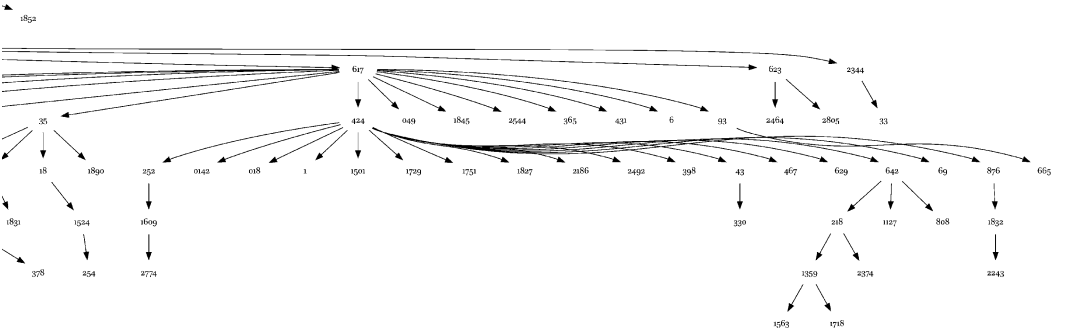


FIGURE 8 *The predominant textual flow diagram at 2 John 1.2/2–6 connecting only the closest potential ancestor*


1852
617
623
2344
35
424
049
1845
2544
365
431
6
93
2464
2805
33
18
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252
0142
018
1
1501
1729
1751
1827
2186
2492
398
43
467
629
642
69
876
665
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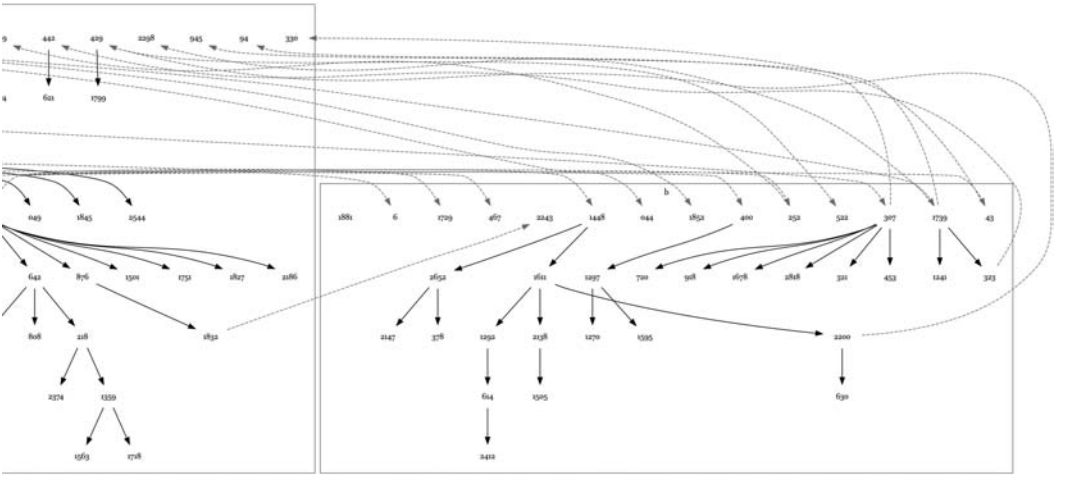
1718


442
429
2298
945
94
330
621
1799
049
1845
2544
642
876
1501
1751
1827
2186
808
218
1832
2374
1359
1563
1718
1881
6
1729
467
2243
1448
044
1852
400
252
522
397
1739
43
2652
1611
1297
720
918
1678
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2138
1270
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2200
614
1505
630
2412

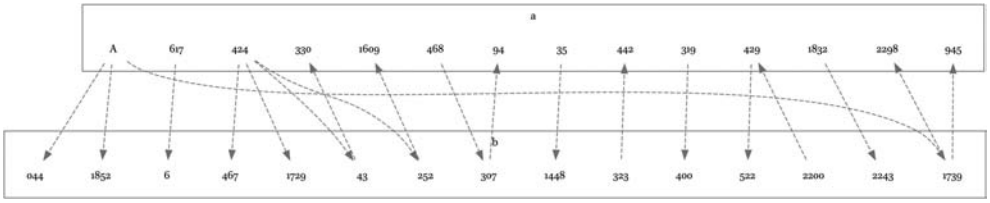


FIGURE 9 *The predominant textual flow diagram for 2 John 1.2/2–6 with a qualified display showing only interrelationships of the first order*

reflect the principles of parsimony discussed earlier. In these diagrams, each witness has derived its text from its closest ancestor. This agrees with the last two principles of parsimony: that scribes use few rather than many sources and that these sources are closely related rather than less related. But it shows repeated violation of the first principle: that scribes copied their main source with fidelity. This offers a concrete demonstration of how the assumptions that determine parsimony in the CBGM "cannot be universally valid."[56]

One way to account for this conflict within the CBGM is by "loosening" the constraints of the textual flow diagram's construction. Rather than requiring that each witness be connected with its *closest* potential ancestor, the diagram can be redrawn to allow a witness to be connected with less similar potential ancestors. In this way, the diagram will reflect more contamination but also greater fidelity in transmission, the assumption being that disagreements with the closest potential ancestor are not occasions of "scribal ingenuity" but rather "fidelity" to an alternate source, if we can use such language.

The way to loosen these constraints is by adjusting the diagram's "connectivity" setting. Instead of limiting our search for source texts to the closest potential ancestor, we can expand it to the first ten potential ancestors of each witness. As we have seen, each witness in the CBGM may have any number of potential ancestors. These can be ranked by their level of pregenealogical coherence as shown in Table 4 for the five closest potential ancestors of 1611.[57]

By loosening the connectivity in a textual flow diagram, we are allowing the computer to connect witnesses with potential ancestors that are ranked lower down the list. A connectivity of "ten" in a textual flow diagram allows the computer to connect a witness with any one of its ten closest ancestors so long as

56 Mink, "Contamination, Coherence, and Coincidence," 151.

57 The potential ancestors can be found in the "Potential Ancestors and Descendants" module online.

TABLE 4 *The five potential ancestors with the highest pre-genealogical coherence with 1611*

Potential ancestor (x)	Rank	Pre-gen. coherence	x → 1611	x ← 1611	Unclear relationship	No relationship
1448	1	92.1%	145	61	16	18
2652	2	90.8%	116	113	26	27
1490	3	90.5%	117	116	30	28
1832	4	89.7%	133	125	29	27
876	5	89.6%	135	127	29	25

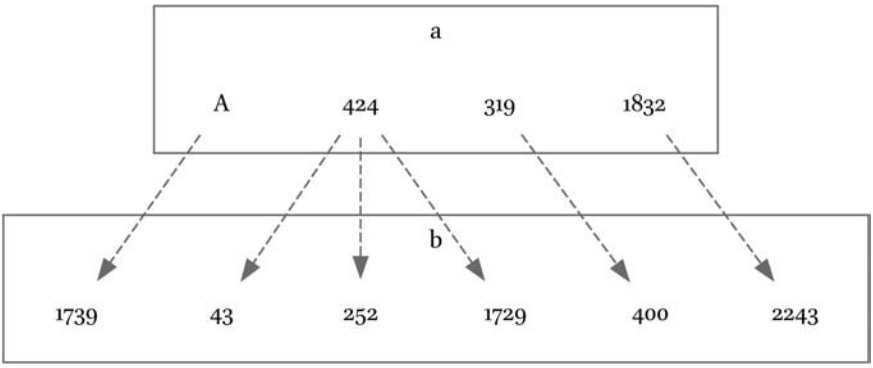


FIGURE 10 *The predominant textual flow diagram for 2 John 1.2/2–6 with a connectivity of ten and a display mode showing only interrelationships*

it still shares the reading with it. This last caveat is important because it means that textual flow diagrams always try to relate witnesses by agreement first. Only when agreement is not possible within the predetermined constraints will the computer connect a witness to a potential ancestor with a different reading. This is a function of the first principle of parsimony. With a connectivity level of ten, our diagram from 2 John 1.2/2–6 can be redrawn (Figure 10).

Moving one step further, we can construct the diagram so that each witness is connected to *any* one of its potential ancestors that shares the same reading. This is considered an "absolute" connectivity. This setting is best used in combination with a display mode set to "full" so that all relationships are visible. (Otherwise we will usually only see a single relationship per attestation.) The results for 2 John 1.2/2–6 are shown in Figure 11. In this case, witness 1739 is the only witness that has no potential ancestors that share the shorter reading with it. If we look closely at this diagram, we notice small numbers next to certain arrows (Figure 12).

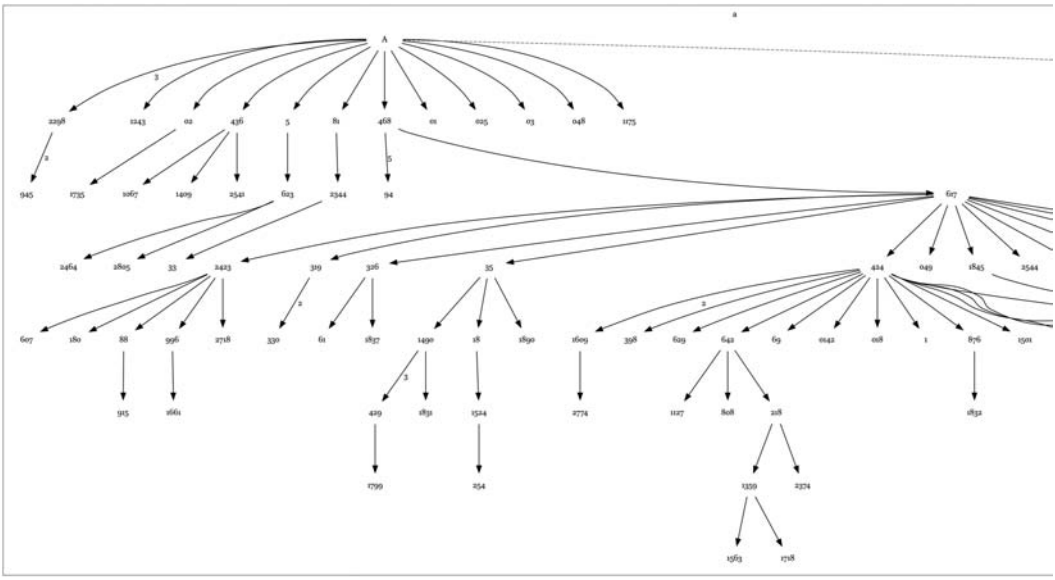
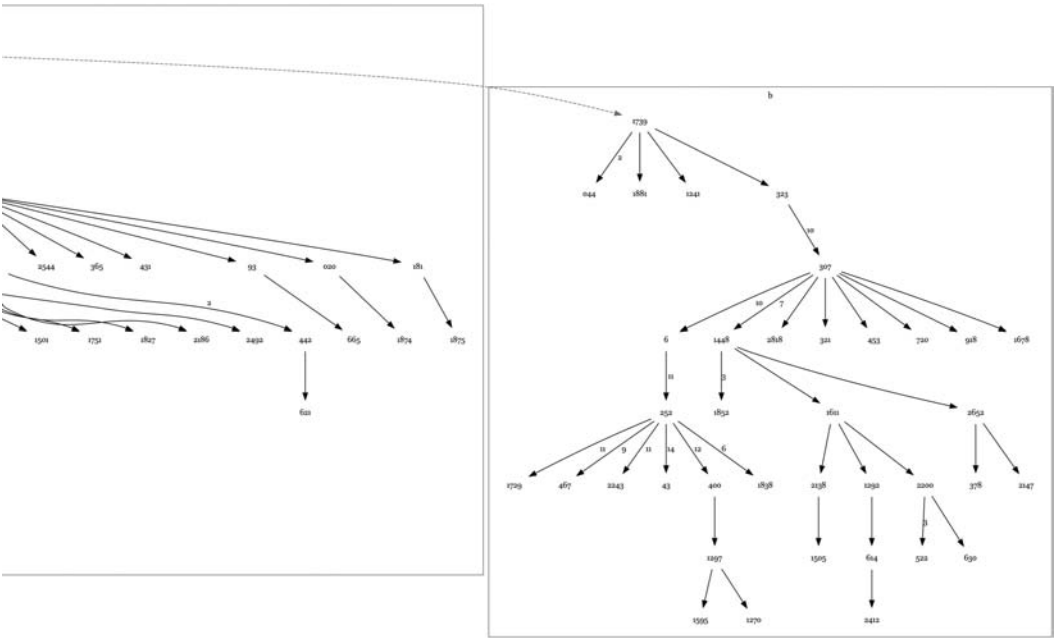


FIGURE 11 *The predominant textual flow diagram for 2 John 1.2/2–6 with connectivity set to "absolute" (499)*

Next to the arrow connecting witnesses 6 and 252, for example, is a small number eleven. This indicates that 252 has ten closer potential ancestors than witness 6 but none of them share the same reading with it here. The computer has had to resort to the eleventh potential ancestor to find agreement. The presence of so many witnesses that do not share the reading of any of their ten closest potential ancestors means that the witnesses attesting variant *b* have poor genealogical coherence. The witnesses that attest variant *a*, however, show much better genealogical coherence (see Figure 13).

Only seven witnesses do not share the same reading as their closest potential ancestor, and none of these must go beyond their fifth closest potential ancestor to find agreement.

We are now in a good position to return to our original question about the variants in question. In this case, the poorer coherence for the shorter reading (*b*), in contrast to the better coherence for the longer reading (*a*), supports our initial hypothesis that *b* is secondary. That the shorter reading has this poorer coherence suggests that it arose multiple times in the course of transmission, a suggestion completely in keeping with our original explanation of the shorter reading as an omission by parablepsis. In this way, the CBGM's genealogical coherence supports what we expect on philological grounds. In other cases,



it may well challenge our text-critical instincts. In the next section, we will consider additional examples.

2 Applying the CBGM to the Catholic Epistles

Having laid out in some detail the principles and procedures of the CBGM it remains to consider how their application to the Catholic Epistles has shaped the editors' text-critical practice. In particular, we consider how it has shaped their practice of "reasoned eclecticism" before looking at several specific cases where the CBGM has led them to revise previous textual decisions in the Catholic Epistles.[58]

58 For similar examples from Acts, see Annette Hüffmeier, "The CBGM Applied to Variants from Acts," *TC* 20 (2015): 1–12.

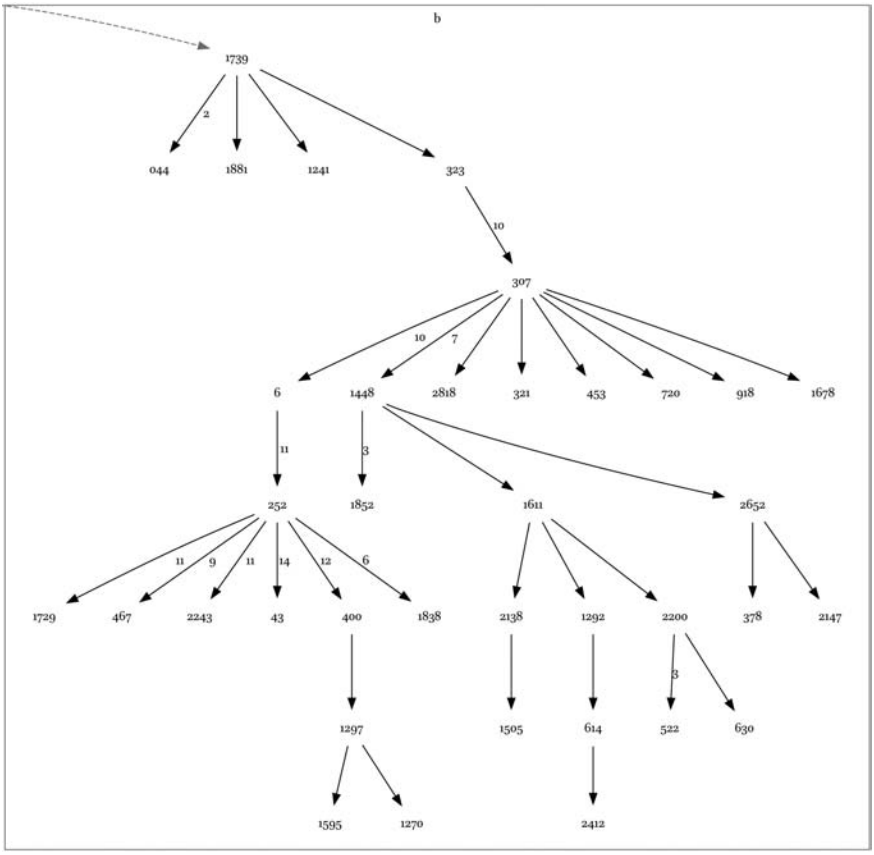


FIGURE 12 *A close up of the right half of Figure 11 showing the witnesses for variant* b

2.1 *The Effect of the CBGM on Reasoned Eclecticism*

The introduction to the ECM2 explains that the overarching text-critical method applied throughout was that of reasoned eclecticism. The editors explain that the basic feature of this method is a consideration of both internal and external evidence.[59] This bifurcation of evidence has a long history and involves a consideration of the age and quality of witnesses (external evidence) as well as consideration of features that might distinguish the work of scribes from that of the author (internal evidence).[60] The editors explain that their use of the CBGM has affected both aspects of reasoned eclecticism. It is worth

59 ECM2, 32*.

60 A good introduction is provided by Michael W. Holmes, "Reasoned Eclecticism in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed.,

considering this effect given that reasoned eclecticism remains the dominant method practiced by New Testament scholars. We will consider the use of the CBGM with other text-critical methods in the next chapter.

2.1.1 External Evidence

As traditionally conceived, reasoned eclecticism involves an evaluation of external evidence or evidence relating to matters of age, geographical distribution, quality, and witness relationships.[61] It should be obvious that the CBGM affects this latter aspect of external evidence, but others have been affected too. In particular, the CBGM has led the editors to consider previously ignored witnesses as important for establishing the text. Most significantly, it has led them to abandon text-types as a way of categorizing and evaluating manuscripts.[62]

2.1.1.1 *Considering New Witnesses*

The second installment of the ECM1 was the first to introduce a new principle for weighing a manuscript's importance for reconstructing the text. The editors explain that they now give special importance to those witnesses that have the initial text as their closest potential ancestor.[63] This criterion has been followed ever since and one result has been a change in the witnesses cited in the NA28 and UBS5 as over against the previous editions.[64] In the NA27, for example, the only consistently cited minuscules are 33 and 1739. Both are still cited in NA28 but 33 is kept only for its interesting "special readings." Alongside these two, a number of new minuscules are now incorporated, including one thirteenth-century representative of the Byzantine text (307). Overall, the editors express surprise at discovering that a number of "pure" Byzantine witnesses show high rates of agreement with their own initial text. This contributed to a new appreciation of the Byzantine manuscripts and this, in turn, led to a reevaluation of all places where the Byzantine reading differed

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NTTSD 42 (Leiden: Brill, 2013), 771–802. For an early reference to the bifurcation, see J. Scott Porter, *Principles of Textual Criticism with Their Application to the Old and New Testaments* (London: Simms and McIntyre, 1848), chs. 2, 3, 5.

61 See Bruce M. Metzger, *A Textual Commentary on the Greek New Testament*, 2nd ed. (New York: United Bible Societies, 1994), 11*–12*; Eldon J. Epp, "Traditional 'Canons' of New Testament Textual Criticism: Their Value, Validity, and Viability—or Lack Thereof," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 96–104.

62 ECM2, 32*–33*.

63 ECM IV/1.2, 23*–24*.

64 See ECM2, 33*; NA28, 52*; NA27, 62*–63*; UBS5, 5*–6*.

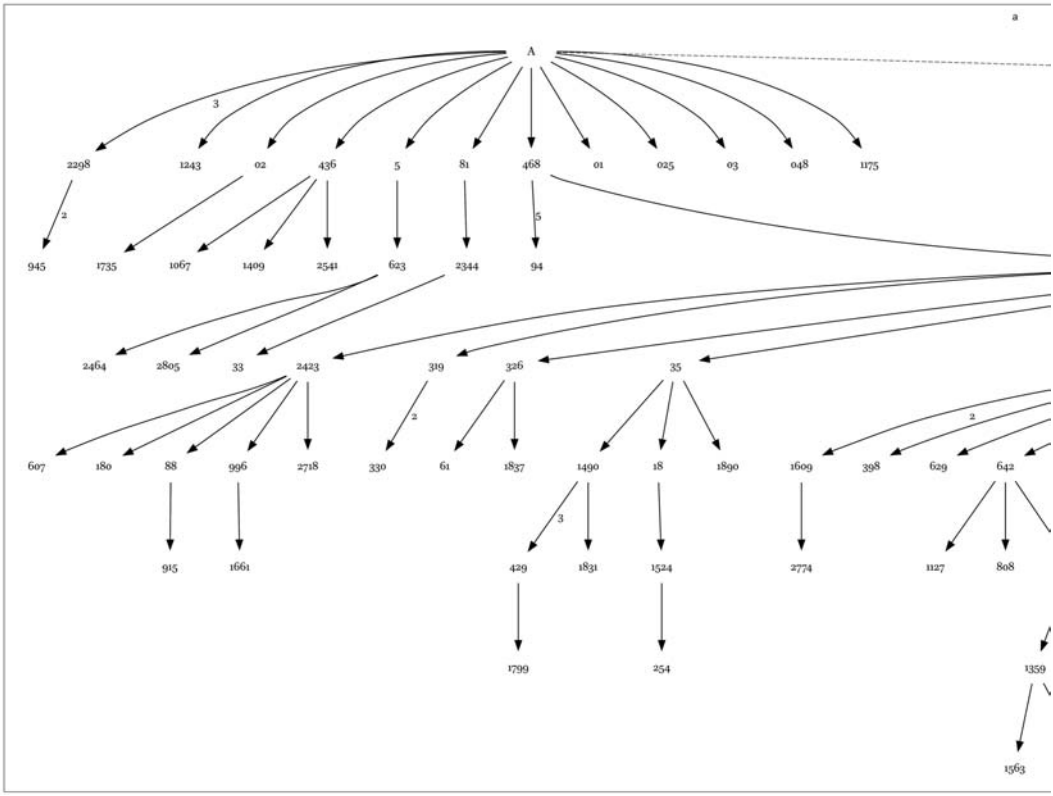
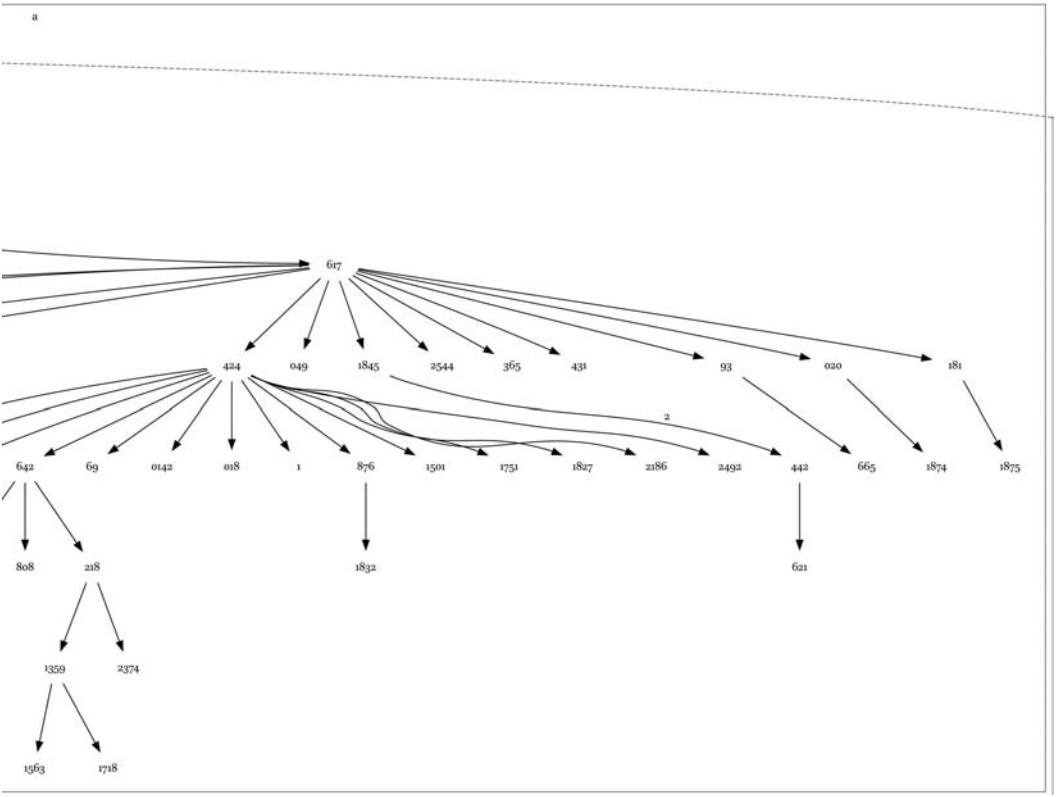


FIGURE 13 *A close-up of the left half of Figure 11 showing the witnesses for variant* a

from the initial text of ECM1.[65] A good illustration of the effect of this shift is the change at 1Pet 4.16/24–28 from ἐν τῷ ὀνόματι τούτῳ as attested by all the earliest evidence to ἐν τῷ μέρει τούτῳ which is attested almost exclusively by late Byzantine manuscripts.[66]

65 ECM2, 34*. Klaus Wachtel's work on the Byzantine text in *Der byzantinische Text der katholischen Briefe*, ANTF 24 (Berlin: Walter de Gruyter, 1995) must have played some role but it is never cited. There is an interesting parallel here with Latin textual criticism of which R.J. Tarrant reported twenty years ago that one of the marked features of that time was the "attention being paid to later manuscripts hastily discarded by previous editors." See his "Classical Latin Literature," in *Scholarly Editing: A Guide to Research*, ed. D.C. Greetham (New York: Modern Language Association, 1995), 111.

66 For discussion, see Gerd Mink, "Was verändert sich in der Textkritik durch die Beachtung genealogischer Kohärenz?," in *Recent Developments in Textual Criticism: New Testament, Other Early Christian and Jewish Literature: Papers Read at a Noster Conference in Münster,*



2.1.1.2 *Rejecting Most Major Text-Types*

Along with an appreciation for Byzantine witnesses has come a major revision of the notion of text-types. Only the Byzantine text is now identified as a clearly unified entity. No other text-type, not even the Alexandrian, emerged clearly from the CBGM's data. This is momentous insofar as the grouping of manuscripts by text-type has played a major role in the history of the discipline. As Eldon Epp puts it, "To write the history of the NT text is to write the history of text types, and concomitantly to write also the history of the criteria for the priority of readings."[67] It is hardly surprising, then, to find that this rejection

January 4–6, 2001, ed. Wim Weren and Dietrich-Alex Koch, Studies in Theology and Religion 8 (Assen: Royal van Gorcum, 2003), 60–62; idem, "Problems," 43–46; cf. §2.3 below.

67 Eldon J. Epp, "Textual Clusters: Their Past and Future in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestio-*

is one of the most controversial results from the CBGM, one that has not gone unnoticed, not least by Epp himself.[68]

Doubts about the validity of text-types surfaced during initial comparisons of the NA27 text with the data in the ECM of 1 Peter.[69] The problems, according to Mink, are that text-types confirm themselves too easily once the basic pattern is established and that they are not able to handle the complexity of the data.[70] As an alternative, Mink argues for focusing on the relations of all individual witnesses and allowing the emerging structure of those relationships to "determine their place in the transmission history."[71] A hint at what is involved in this "determination" is given by Wachtel in a paper on the role of coherence in evaluating external evidence. He writes that

> Applying external criteria guided by the CBGM involves determining the probable source of a reading in every single manuscript in which it is attested. On this basis we gain a far more clearly differentiated picture of the position of a witness in the whole of the transmission process.[72]

As the preceding discussions in Wachtel's paper all involve the interpretation and use of textual flow diagrams and the data behind them, it becomes clear that this is the primary way that "the position of a witness in the whole of the transmission process" is determined. Curiously, there is no mention of the global stemma in this essay, a feature of the CBGM one would expect to be relevant to external evidence.

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nis, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 519.

68 Ibid., 547–552.

69 Mink, "Contamination, Coherence, and Coincidence," 148–149 n. 16; idem, "Was verändert sich," 47–49.

70 Again, compare Tarrant who says of Latin textual criticism that "in the most heavily contaminated traditions the classification of witnesses may have virtually no practical value" ("Classical Latin Literature," 109).

71 Mink, "Contamination, Coherence, and Coincidence," 148.

72 Klaus Wachtel, "Towards a Redefinition of External Criteria: The Role of Coherence in Assessing the Origin of Variants," in *Textual Variation: Theological and Social Tendencies? Papers from the Fifth Birmingham Colloquium on the Textual Criticism of the New Testament*, ed. David C. Parker and H.A.G. Houghton, Texts and Studies Third Series 6 (Piscataway, NJ: Gorgias, 2008), 126.

2.1.2 Internal Evidence

Since as far back as Westcott and Hort, internal evidence has often been subdivided into intrinsic evidence which is concerned with the author and transcriptional evidence which is concerned with scribes.[73] It is particularly this latter type that has been affected by the CBGM. In particular, the use of genealogical coherence has led the editors to propose new ways of investigating how scribes copied their texts.

2.1.2.1 *Genealogical Coherence as a New Criterion*

As we have seen, the study of genealogical coherence is the most important and influential aspect of the CBGM to date. The ECM editors have said that they used it both "for retrieving source variants" and for detecting "multiple emergence of a variant."[74] In the first case, possible source variants can be identified using textual flow diagrams. These diagrams are particularly useful for revising local stemmata. An example of such a use is given in the discussion of Jas 2.3/44–48 below. In the second case, multiple emergence of a variant may be detected when the genealogical coherence is imperfect as explained above with regard to 2John 1.2/2–6. Where such is the case, the genealogical coherence also implies that this reading is not a good candidate for the more difficult reading (*lectio difficilior*) since such a reading is not likely to be created multiple times.[75] Putting this observation in the form of a new criterion, Tommy Wasserman has said that "a reading with imperfect genealogical coherency among its attesting witnesses is more likely the creation of scribes, since it seems to have arisen several times in the tradition by coincidence."[76] A further example of this use of coherence is discussed with regard to 1Pet 1.6/18 below.

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73 See Westcott and Hort, *Introduction*, 19–30; Metzger, *Textual Commentary*, 12*–14*; Epp, "Traditional 'Canons,'" 105–125.

74 ECM2, 34*. Curiously, the ECM IV/1.3 (p. 30*) places genealogical coherence in the category of external criteria and says that there has been no change in the application of internal criteria. Perhaps coherence, as used in the CBGM, is being thought of as a bridge between internal and external evidence and thus relevant to both?

75 ECM IV/1.2, 24*; ECM IV/1.4, 38* n. 1; Mink, "Problems," 38; idem, "Contamination, Coherence, and Coincidence," 175.

76 Tommy Wasserman, "Criteria for Evaluating Readings in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 606.

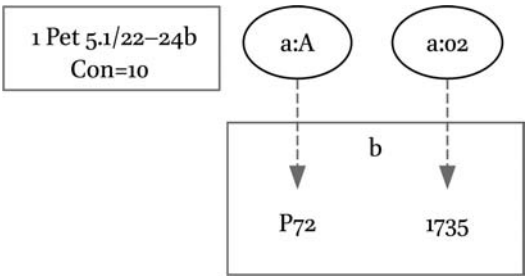

FIGURE 14 *The textual flow diagram for reading* b *at 1Pet 5.1/22–24 showing multiple emergence from reading* a

2.1.2.2 *Genealogical Coherence and Scribal Tendencies*

If the CBGM can retrieve source variants, and if it does so by relating witnesses to each other, then it should be able to tell us something about the copying tendencies of scribes. Thus Holger Strutwolf writes that "as we now know the textual character of the ancestors the scribe was probably copying [through the CBGM], we can reconstruct the scribal habits much better than was possible before."[77] As with the identification of the *lectio difficilior*, Strutwolf's procedure is to study genealogical coherence using textual flow diagrams in order to determine the likely source(s) for specific readings. In some cases, Strutwolf's results are what we expect: small words are easily dropped and subsequently added back in when the resulting syntax suffers, as with καί in 1Pet 2.18/32. In other cases, the results are surprising, as with the seemingly unusual ἔλεον in Jas 2.13/16 that is transmitted faithfully over many generations. In one particularly interesting example, Strutwolf suggests that observing multiple emergence of a variant can inform our judgments about scribal motivations. In 1Pet 5.1/22–24, both P72 and 1735 read τῶν τοῦ θεοῦ παθημάτων where all other witnesses in the ECM have τῶν (τοῦ) χριστοῦ παθημάτων. The textual flow diagram for θεοῦ (reading *b*) shows both occurrences as developing from χριστοῦ (reading *a*) just as one might expect (see Figure 14).

Strutwolf notes that these two witnesses are not closely related and so each one must have produced the reading independently of the other.[78] Since 1735

77 Holger Strutwolf, "Scribal Practices and the Transmission of Biblical Texts: New Insights from the Coherence-Based Genealogical Method," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 147–148.

78 Ibid., 159. On this point Strutwolf is in agreement with James R. Royse, *Scribal Habits in Early Greek New Testament Papyri*, NTTSD 36 (Leiden: Brill, 2008).

is not believed to have any theological tendencies (unlike P72), the obvious explanation is mere scribal error. Given that P72 leaves the text unchanged in other passages that appear ripe for theological change,[79] Strutwolf suggests that what happened by accident in 1735 may have also happened by accident in P72. The CBGM has thus been used to address not only scribal change, but scribal motivation too.[80] Chapter four will consider this use of the CBGM in greater detail.

2.2 *Changes between NA27/UBS4, ECM1, and ECM2/NA28/UBS5*

Overall there are thirty-three changes between the text of the NA27/UBS4 and NA28/UBS5 not counting spelling changes.[81] These changes offer the most direct and obvious ways to assess the effect of the CBGM. We can add more detail to our comparison by including the first edition of the ECM so long as we keep in mind that the CBGM was not applied there evenly throughout. Comparing these three stages, then, we find a total of 125 places where they differ either in their editorial text or in whether they mark a variation as somehow difficult. A complete list of these differences is provided in Appendix A.

In the case of marking uncertainty, the nature of that uncertainty has changed between these editions. The NA27 used brackets to mark text about which the editors were not "completely convinced."[82] The ECM1 used bold dots (●) to serve a similar function but these were eventually abandoned due to their inconsistent application. In the first fascicle they marked readings deemed of "equal value" with the alternate reading,[83] in the second fascicle they marked places that simply called for "special critical consideration,"[84] and by the fourth fascicle they were used for places where the critical discussion "has not proved conclusive."[85] In total, there are eighty-eight places marked by bold dots in the ECM1.

79 Strutwolf, "Scribal Practices," 144.

80 For a similar use of the CBGM to address scribal motivation, see Wasserman, "Criteria," 603–604.

81 NA28, 50*–51*; UBS5, 3*–4*. The editors do not count Jas 1.22/14–16 as a change although it is marked with a diamond.

82 NA27, 49*.

83 ECM IV/1.1, 11*.

84 ECM IV/1.2, 24*.

85 ECM IV/1.4, 37. Wachtel explains the bold dots as indicating "that the preponderance of arguments for the primary line text is only slight as compared with the one or more variants placed in the apparatus" ("A New Way," 132).

In place of the bold dots, the ECM2 introduced the use of the diamond symbol (♦) which came with a much more restricted meaning. In contrast to brackets and dots, the diamond marks places where the editors "formally refrain from any rating" as to which reading they prefer.[86] This refusal to rate either variant is visually reinforced in the ECM2 by printing both readings (and there are only ever two) on a split level in the main text. This feature had to be abandoned in the NA28/UBS5 presumably because of their formatting. As it is, both editions print the reading of their previous edition in the main text and the alternate reading in the apparatus. There are forty-three diamond-marked variations. Interestingly, most of them do not satisfy the UBS5's criterion of being relevant for translation or exegesis: less than a quarter (ten total) appear in the apparatus with the remaining thirty-three consigned to an appendix.[87]

By comparison, this means that there are more diamonds in the ECM2 than there are brackets in the NA27 and this despite the much stricter definition of the latter. This is certainly evidence for Wachtel's claim that the CBGM "often does not make textual decisions more secure" but instead may "cast new doubt on cases that seemed settled."[88] At least this is true if one compares the use of brackets in the NA27 with the diamonds in NA28. If, however, we compare the use of dots in the ECM1 with diamonds in the ECM2/NA28, a slightly different picture emerges. In this case, there are twenty-four places where dots are replaced by diamonds, sixty-five places where diamonds do not replace former dots, and nineteen places with diamonds but no previous dots. Unfortunately, the differences between the diamond and bold dots restrict the usefulness of this comparison. In any case, it is worth pointing out that even security in uncertainty has its own benefits. As Paul Maas said, "to present what is doubtful as certain is to remain farther from the goal than if one were to confess one's doubt."[89]

2.3 *Example Changes*

If the preceding statistics give a view of the amount of change introduced by the CBGM, the following examples give a more discriminating view of the nature of those changes. In particular, they illustrate the varied ways that the CBGM can influence the editors' decisions and show that textual criticism remains a craft to be plied rather than a mathematical formula to be solved.

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86 ECM2, 34*.

87 UBS5, 890, cf. 4*.

88 Wachtel, "Towards a Redefinition," 127. The same point is offered again in Wachtel, "A New Way," 138.

89 Maas, *Textual Criticism*, 17.

2.3.1 Jas 2.4/2–6

Jas 2.4 provides a good illustration of the CBGM's influence because it was one of the first textual changes ascribed directly to the evidence from Mink's new method.[90] In context, Jas 2.4 is concerned with the problem of showing partiality. Verse 2 introduces a protasis with ἐὰν γὰρ εἰσέλθῃ εἰς συναγωγὴν ὑμῶν ἀνὴρ χρυσοδακτύλιος ἐν ἐσθῆτι λαμπρᾷ. After further qualification, the apodosis is given in verse 4 in the following forms:[91]

a. και ου διεκριθητε: 025. 5. 69. 88. 218. 398. 400. 623. Byz. G:G-D. Sl:Ch and many others
b. και διεκριθητε: 322. 323. 629
c. ου διεκριθητε: 01. 02. 03Z. 04. 18. 33. 35. 1611. 1739. Antioch. Cyr and many others
d. ουχι διεκριθητε: 044
e. διεκριθητε: 03T. 1852. L:F

Readings *b*, *d*, and *e* bear the marks of scribal corruptions of either reading *a* or *c* and this is supported by their thin external support. This leaves a choice between *a* and *c*. Before the advent of the CBGM, the editors of the ECM1 preferred reading *c* because of its strong external support. This was despite their opinion that reading *a* was the *lectio difficilior*, one that must have arisen under Semitic influence and therefore "cannot have been familiar" to later scribes.[92] In short, the external evidence outweighed the internal. But with the advent of the CBGM, it was precisely the editors' opinion of the external evidence that shifted. Specifically, the predominant textual flow diagrams for reading *a* show perfect genealogical coherence (see Figure 15). They further show several late manuscripts (025, 5, 468) whose text nevertheless connects directly to the initial text (A) in the flow.

From this the editors concluded that these witnesses are more important than previously thought. Witness 5, for example, is now a consistently cited witness in the Catholic Epistles in the NA28. This new appreciation combined with their judgment about the internal evidence made the decision in favor of reading *a* an easy one.

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90 ECM IV/1.2, 24* n. 4.

91 The evidence here and in the following examples is selected from the ECM2.

92 Mink, "Problems," 61. There is some disagreement on the grammatical point. BDAG says that introducing an apodosis with καί was "not offensive to ears trained in good Greek" (s.v. καί 1.b.δ) but Geoffrey Horrocks lists it as a distinct feature of Biblical Greek (*Greek: A History of the Language and Its Speakers*, 2nd ed. [Oxford: Wiley-Blackwell, 2014], 107, 147).

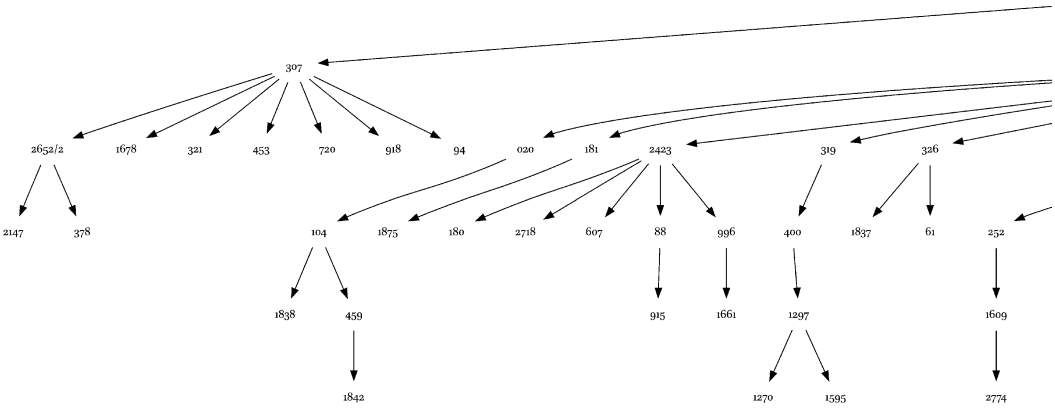


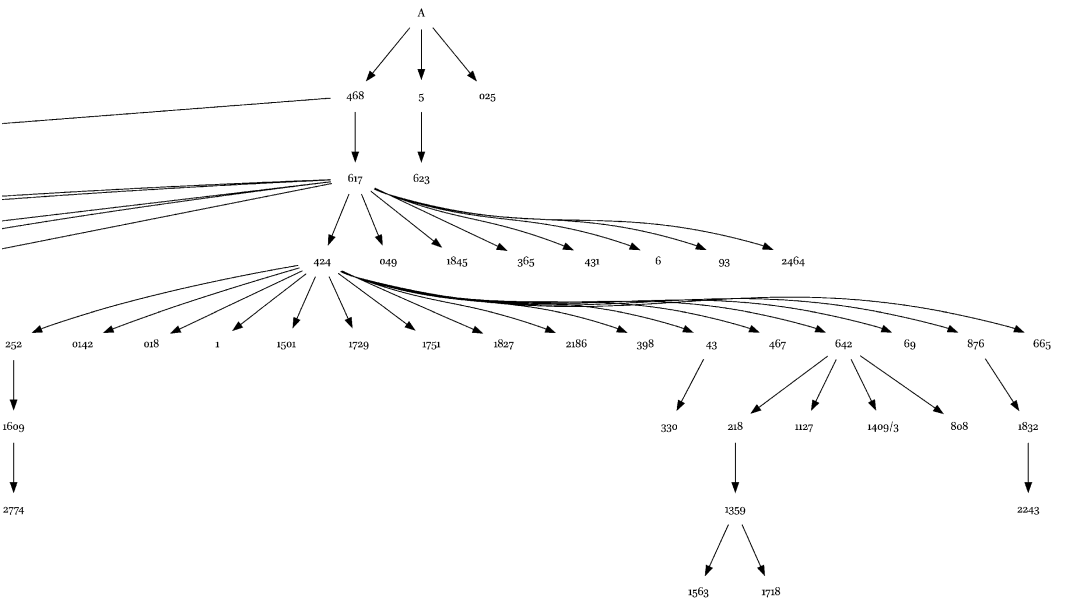
FIGURE 15 *The textual flow diagram for Jas 2.4/2–6 reading* a *showing three late witnesses which connect to the initial text* (A)

This example provides a good illustration of how the CBGM has (and has not) affected the practice of reasoned eclecticism. On the one hand, both types of evidence (internal and external) are still considered in turn. In this case, the internal evidence has not changed but the external has. The weight ascribed to certain witnesses has shifted because of the results of the CBGM. The result is that a reading found in the earliest manuscripts of James (01, 02, 03, 04) is now rejected for a reading not found in any Greek manuscript until the ninth-century. In this instance, the editors show their willingness to follow Pasquali's dictum: *recentiores non deteriores*.

2.3.2 1Pet 4.16/24–28

Another good example of the CBGM loosening the grip of early witnesses is found in 1Pet 4.16. In the context of Christian suffering, the readers are encouraged to glorify God rather than to be ashamed. What exactly they are to glorify God for, however, depends on the variant. There are five extant variants:[93]

93 I have included the preposition for clarity though it is not part of the variation unit in the ECM.



a. εν τω μερει τουτω: 104. 180. 206. 254. 307. Byz. Sl and many others
b. εν τω ονοματι τουτω: P72. 01. 02. 03. 044. 33. 1611. 1739. Cyr. L:AVT. K:SB. S:PH. A. G. Ä and many others
c. εν τω μερει τουτου: 431. 1875
d. εν τουτω τω μερει: 629
e. εν τω μερει τουτω η τω ονοματι τουτω: 378. 2147. 2652

The last three readings are fairly obvious variations of either *a* or *b* or both, a conclusion again supported by the paucity of their external support. The strongest reading on external grounds is clearly reading *b* with its early third- or fourth-century witnesses and almost unanimous versional support (Latin, Coptic, Syriac, etc.). Reading *a*, on the other hand, is not attested until the ninth-century in majuscules such as 018, 020, and 025, all of which are Byzantine. The only versional support is the Old Church Slavonic. From this evidence it is fairly obvious why reading *b* has been preferred by most commentators and editors including the editors of the NA27.[94]

94 Commentators who prefer this reading include Leonhard Goppelt, *A Commentary on 1Peter*, trans. John E. Alsup (Grand Rapids: Eerdmans, 1993), 328 n. 47; F.W. Beare, *The*

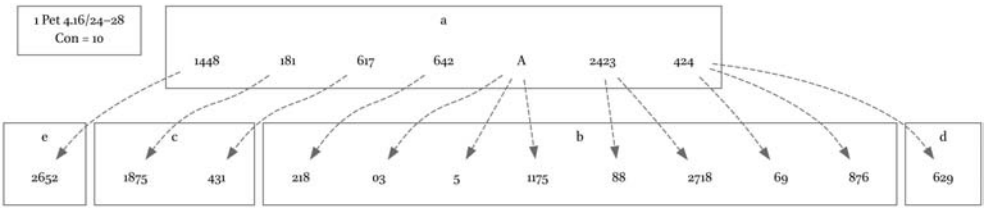


FIGURE 16 *A predominant textual flow diagram for 1 Pet 4.16/24–28 showing reading* b *developing from reading* a

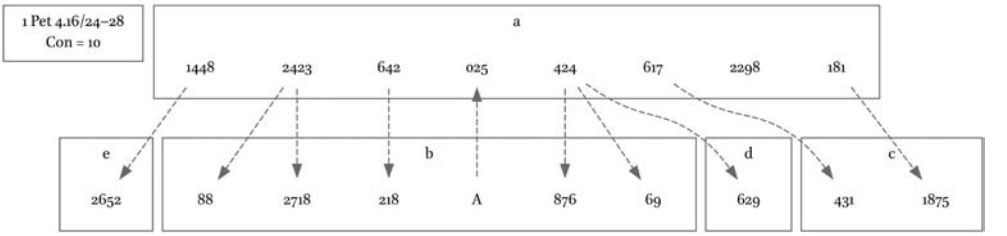


FIGURE 17 *Setting reading* b *as the initial text for 1 Pet 4.16/24–28 still shows multiple cases of* b *developing from* a

In contrast to the external evidence, Mink points out that the internal evidence strongly favors reading *a* since its meaning is more obscure. Moreover, ὀνόματι has a ready transcriptional explanation given its use just two verses earlier.[95] Mink thus concludes that reading *b* "can hardly have served as the source for *a*."[96] This conclusion again finds support in the textual flow diagrams. Whereas reading *a* shows excellent genealogical coherence, reading *b* does not (Figure 16). The diagram shows multiple witnesses with reading *b* descending from witnesses with reading *a*. This is true even if we set reading *b* as the initial text (Figure 17).

First Epistle of Peter: The Greek Text with Introduction and Notes, 3rd ed. (Oxford: Blackwell, 1970), 193; Edward G. Selwyn, *The First Epistle of St. Peter* (London: Macmillan, 1946), 225; Mark Dubis, *1 Peter: A Handbook on the Greek Text*, BHGNT (Waco, TX: Baylor University Press, 2010), 153; John H. Elliott, *1 Peter: A New Translation with Introduction and Commentary*, Anchor Bible 37B (New York: Doubleday, 2000), 796; Lewis R. Donelson, *1 & 2 Peter and Jude: A Commentary* (Louisville: Westminster John Knox, 2010), 133; Paul J. Achtemeier, *1 Peter*, Hermeneia (Minneapolis: Fortress, 1996), 303–304 n. 6.

95 A number of witnesses, in fact, have ὄνομα in the latter half of 1 Pet 4.14 as well.

96 Mink, "Problems," 43. The same variation is discussed in Mink, "Was verändert sich," 61–62. Mink's discussion is based solely on the data for James whereas we include here all the data from the ECM2.

This suggests that, if reading *b* was the initial source of reading *a*, it must have nevertheless developed in the opposite direction multiple times.[97] The simpler explanation is that it developed in this way initially as well.

This example again shows how the CBGM works with traditional text-critical judgments both confirming and challenging them. Here the judgment about transcriptional probability was confirmed by the textual flow diagrams while the evaluation of particular witnesses was changed. In the latter case, the editors' new appreciation for a number of late manuscripts with a text close to the initial text was enough to tip the scales. The bold dots that marked this variation in the ECM1 were dropped and reading *a* was printed as the unqualified initial text in the ECM2.

2.3.3 Jas 2.3/44–48

Our next example offers a good illustration of how the CBGM's fundamental principle (cf. §1.1) enables an iterative use of the CBGM. In this particular case, the editors' cumulative decisions in the Catholic Epistles led to a revision of their initial judgment at Jas 2.3/44–48.[98] This is also another case where bold dots present in the ECM1 were dropped and not replaced by a diamond in the ECM2. The variation here is in the same context of favoritism mentioned in our first example for Jas 2.4/2–6. Here in verse 3, James presents two contrasting attitudes towards those in the midst of the community. The well-dressed are told to sit in a good place whereas the poor are told to sit or stand by a footstool which is "here," "there," or nowhere in particular depending on the reading followed. The seven variants in the ECM are:[99]

a. συ στηθι η καθου εκει: 03. 945. 1175. 1241. 1739. L:F. K:S^{mss} and some others
b. συ στηθι εκει η καθου: 02. 044 33. 81. 206. Cyr. L:V. K:S^{ms}. S:H. Ä and many others
c. συ στηθι εκει και καθου: 04*
d. συ στηθι εκει η καθου ωδε: 01. 025. 5. 322. 323. Byz. K:B. S:P. G:G-D. Sl:ChDMSi and many others
e. συ στηθι εκει και καθου ωδε: 04C2. K:S^{ms}
f. συ στηθι εκει: 1563
g. συ στηθι ωδε η καθου εκει: 365

97 Mink, "Problems," 44.

98 For discussion of this variant, see Wachtel, "A New Way," 131–136.

99 For clarity I have included σὺ στῆθι which are not part of the variation unit in the ECM.

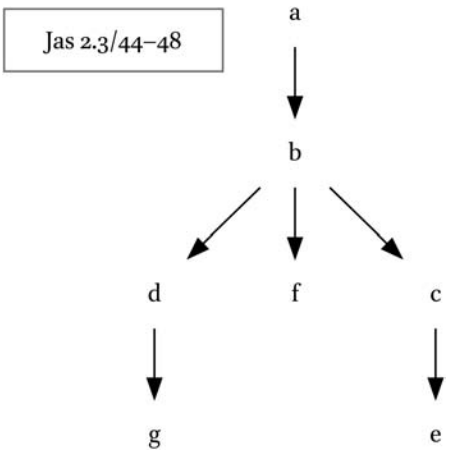


FIGURE 18
The local stemma for Jas 2.3/44–48 for the ECM1

In the ECM1, the editors judged reading *e* to be an attempt to correct *c* which itself was judged to be a corruption of *b* by confusing ᾗ for καί-compendium.[100] Reading *f* is marked in the ECM as an error (*Fehler*) because the editors could not make sense of it in light of what follows in manuscript 1563. Reading *g* bears the marks of an inversion of reading *d*. This leaves readings *a*, *b*, and *d* in need of explanation. In the first edition, the editors felt that reading *a* led to *b* which then led to *d*. The local stemma was drawn up as shown in Figure 18.

This initial stemma was drawn up without the benefit of full genealogical data for the Catholic Epistles. In light of more complete data, the placement of readings *a*, *e*, *f*, and *g* were confirmed while the source variants for *b*, *c*, and *d* were not. The textual flow diagram for reading *b*, for example, showed that a number of potential ancestors for witnesses with reading *b* had reading *d* (see Figure 19). Reading *d*, on the other hand, shows strong genealogical coherence (Figure 20), suggesting that it emerged once in witness 323.

Among 323's closest potential ancestors are 1739 which attests reading *a* and 04 which attests reading *c*. Since 1739 is the closest, this is the more likely source.[101] Observing these textual flow diagrams led the editors to reverse the relationship of readings *b* and *d* and to mark reading *c* as derivative of reading *a* rather than *b*. The revised local stemma is shown in Figure 21.

100 Wachtel, "A New Way," 133.

101 It should be noted that Wachtel's paper was written before version two of the CBGM was complete. Our discussion is based on the second edition but nothing here is affected by the changes.

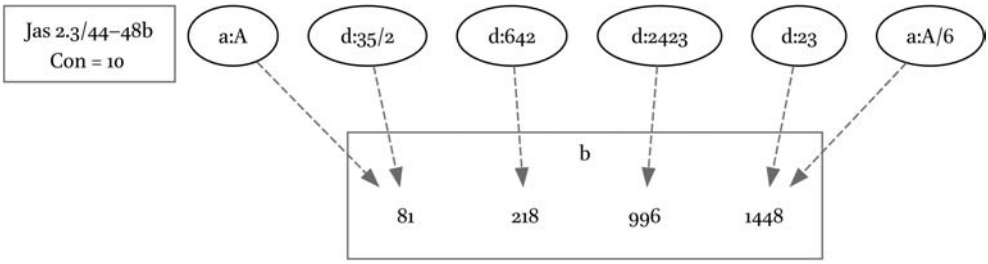


FIGURE 19 *The predominant textual flow diagram for reading* b *in Jas 2.3/44–48 showing multiple potential ancestors with reading* d (*e.g., 642 → 218*) *rather than reading* a

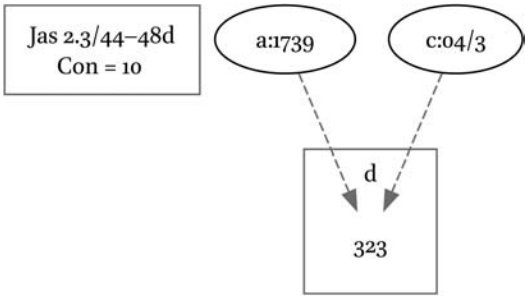


FIGURE 20 *The left section of the textual flow diagram for Jas 2.3/44–48 reading* d *showing witnesses of either reading* a *or* c *as the most likely potential sources*

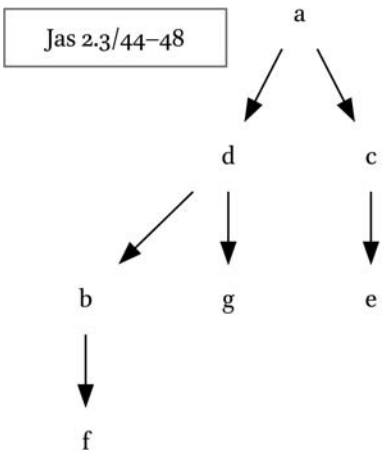


FIGURE 21
The revised local stemma for Jas 2.3/44–48

2.3.4 1 Pet 1.6/18

At 1 Pet 1.6/18 we are presented with five readings although the main candidates are only two. The choice is a matter of grammar with no effect on the meaning, but this example provides a good illustration of how the CBGM comes into play when evaluating both internal and external evidence. The five variants at this point are as follows:

a. λυπηθεντας: 01*. 020. 0142. 6. 61. Pr and many more
b. λυπηθεντες: P72. 01c2. 02. 03. 04. 044. 5. 33. 1739. Byz. Clem. Did. Or. L:V. K:SB. S:H and many more
c. ημας λυπηθεντας: 048v. MaxConf. Phot
d. λυπηθηναι: 1837t. 1875
e. omit: 1845t

The three last readings (*c*, *d*, *e*) are poorly attested and appear to be simple blunders, attempts to clarify the meaning, or perhaps to simplify the syntax. The main choice is between reading *a* and *b*. Mink reports that the NA27 editors preferred reading *b* because of its strong attestation (P72, 01c2, 02, 03, 04). The ECM1 followed the NA27 but marked the reading with a bold dot denoting some uncertainty. In the ECM2, all dots were dropped and reading *a* replaced *b* as the initial text. Internally, the change was justified, according to Mink, on the grounds that the accusative λυπήθεντας depends on the accusative ὑμᾶς which occurs in v. 4 whereas the nominative λυπήθεντες connects easily and obviously with the subject of the preceding verb ἀγαλλιᾶσθε. From this it was concluded that "without any doubt, variant *a* constitutes the *lectio difficilior*, and the change [by scribes] to *b* is natural and obvious."[102]

Although the exact opposite conclusion has been argued for,[103] the CBGM is thought to provide support for the editors' judgment in favor of λυπήθεντας. The textual flow diagram for this reading shows strong genealogical coherence (Figure 22), indicating that it did not develop multiple times and so could be the *lectio difficilior*.[104] Added to this is the fact that several witnesses of reading

102 Mink, "Problems," 41.

103 Achtemeier (*1 Peter*, 99 n. 2) argues that it is the nominative λυπήθεντες that is grammatically difficult and that this was changed to the accusative to agree with ὑμᾶς as the implied object of δέον. But, as noted, λυπήθεντες naturally agrees with the subject of ἀγαλλιᾶσθε.

104 So Mink: "If a variant is qualified as *lectio difficilior*, it is rather uncredible that it could have emerged more than once" ("Problems," 41). Mink does note that reading *b* has equally good coherence here as well.

a have the initial text as their closest potential ancestor (01*, 436, 1175, 1243, 1852), giving it a degree of external credibility which it previously lacked. In this case, the CBGM could not honestly be said to have determined the editors' decision, but it certainly did allow for and confirm it by increasing their esteem for certain witnesses and by not falsifying their determination of λυπήθεντας as the *lectio difficilior*.

These examples all show that the traditional criteria of reasoned eclecticism are all still employed even as they are newly informed by the information provided by the CBGM. This applies to both internal and external evidence. Some manuscripts previously ignored are now treated with greater respect while genealogical coherence gives the editors a new way to investigate the relationships of specific variants. In some cases, it suggests that a particular variant arose multiple times. In others it even suggests the sources for particular variants. These uses show why the editors now find genealogical coherence indispensable in their work.

3 Conclusion

This concludes our introduction to the CBGM. No doubt the reader has a better sense now of why it has been misunderstood. It is anything but simple. This is the main reason why the present chapter was needed and why it has needed to be so long. Understanding must precede judgment and the preceding discussion has been restricted to the former to better prepare for the latter. Before embarking on such a judgment, several observations need to be made.

In the first case, it should be said again that, despite differences, the CBGM shares with all genealogical methods the attempt to find textual relationships and to exploit these to produce an editorial text. To do this, there are a number of key innovations. Rather than searching for the genealogy of individual manuscripts (like Lachmann) or groups of manuscripts (like Westcott and Hort), the CBGM searches for genealogical relationships between the texts of manuscripts. This disjunction between text and manuscript allows for relationships that might otherwise be ignored or excluded because of their chronology. Another innovation is that these texts are now compared and related using all their variants rather than just a small selection as has been done for so long in New Testament textual criticism. But the most important innovation of the CBGM is the notion of coherence. Genealogical coherence is a combination of traditional quantitative measurements (pre-genealogical coherence) combined with the editors' own decisions. These data are then "mapped" onto indi-

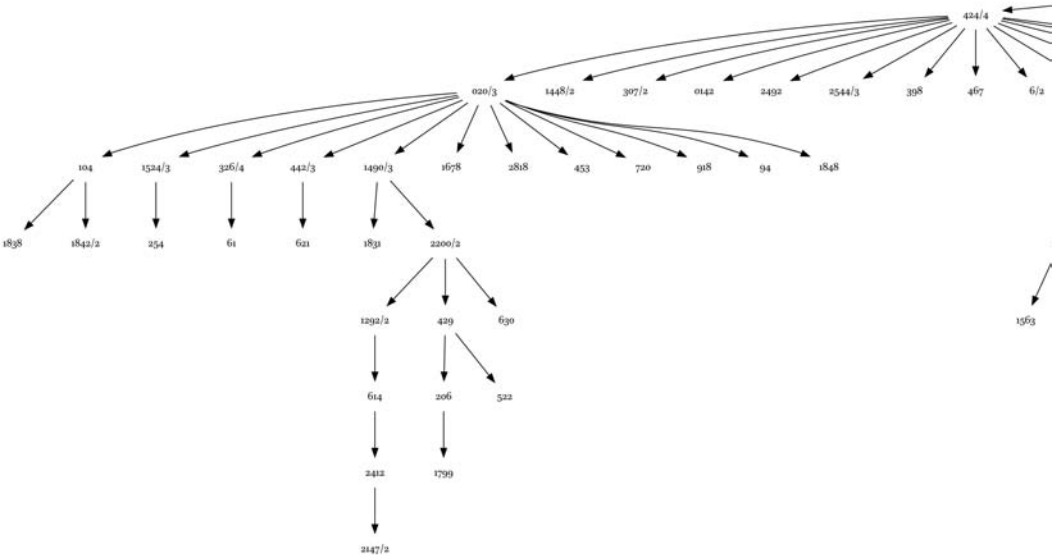


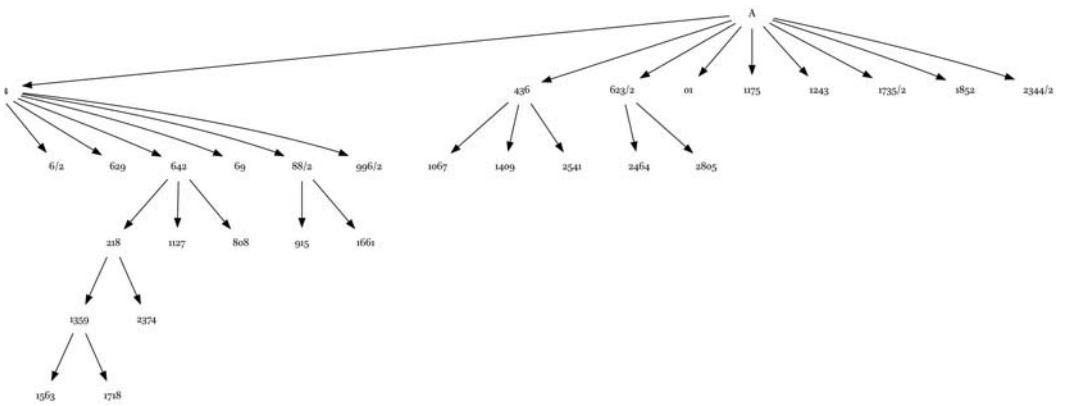
FIGURE 22 *Textual flow diagram for 1Pet 1.6/18 reading* a *showing strong genealogical coherence*

vidual points of variation allowing for constant observation of—indeed, confrontation with—the cumulative effects of one's own genealogical decisions. Within the CBGM, this observation of genealogical coherence happens primarily by means of predominant textual flow diagrams. These diagrams can be used to investigate the nature of specific variants and to test hypotheses about how they developed. They are by far the most prominent feature of the CBGM and they are used to address the longstanding problems of coincidental agreement and contamination. If the CBGM succeeds at this point, it represents a significant advance well beyond the confines of New Testament textual criticism.

Turning to the use of the CBGM on the text of the New Testament, the editors of the ECM have assured readers that the CBGM itself "makes no textual decisions"[105] and "does not provide a means of automating the reconstruction of the initial text, nor the 'royal way' to it."[106] Of course, this does not mean that the CBGM has had little or no effect on the practice of textual criticism. Quite the opposite, as we have seen. The evaluation of external evidence is "the decisive

105 Mink, "What Is It About?"

106 Wachtel, "Towards a Redefinition," 127.



change that is brought about by the CBGM."[107] Witnesses that were previously given little attention have now been raised to new prominence because of their close relationship with the editors' reconstructed text. Most notably, the Byzantine text has been given greater weight overall, even to the point of being preferred, in some cases, over the unified voice of the earliest witnesses. This coincides with the editors' conclusions that, with the possible exception of the Byzantine, text-types are not a viable category for thinking about textual relationships. The significance of this shift is perhaps best felt by consulting the section on transmission history in Metzger's *Textual Commentary* and asking what would be left of it if text-types were omitted.[108] The answer is very little.

Internal evidence has also been affected. The detailed relationships shown in textual flow diagrams have encouraged the editors to apply them to questions of transcriptional tendencies and to evaluations of which reading constitutes the *lectio difficilior*. The quality of coherence visible in these diagrams has

107 Ibid., 114.

108 Metzger, *Textual Commentary*, 3*–10*.

even been offered as a new criterion wherein readings with stronger genealogical coherence are preferred over those with weaker. None of this means that the computer is making decisions, but it is alerting the editor to the implications of their own decisions, sometimes showing relationships they may have overlooked before. And this can be significant. Overall, the CBGM has one of the characteristic features of the ECM.[109] Whether this is to be lauded or lamented is the question taken up in the following chapters.

109 ECM IV/1.3, Preface.

PART 2

CHAPTER 3

Recovering the Initial Text

The previous two chapters have described the history and principles of the CBGM. We have seen that the method has two overarching aims: (1) to aid in the reconstruction of the initial text and (2) to provide information that can be useful for understanding the text's subsequent development. Importantly, several critics of the method regarding this second aim are nevertheless positive about the first. Dirk Jongkind concluded his 2014 SBL paper with five reasons why the method is useful for establishing the initial text,[1] and Stephen Carlson has affirmed that "the 'initial text' produced by the CBGM may reflect the authorial text better [than other methods]."[2] These endorsements are significant in that both authors, as we shall see, are less optimistic about the CBGM's ability to help us answer historical questions.

But not all agree. Bengt Alexanderson concludes his review of the CBGM by saying that "I do not think the method is of any value for establishing the text of the New Testament."[3] This chapter and the next will concentrate on this question of the CBGM's value for establishing the initial text. The present chapter examines three methodological questions tied to this pursuit. We attempt to clarify the confusion about what the "initial text" is, we challenge the claim of the CBGM to be a "meta-method" which can be used by those of varying approaches to textual criticism, and, finally, we argue that the method's use of coherence to detect coincidental agreement is not methodologically circular. This sets the stage for the next chapter wherein we apply

1 These are (1) the CBGM will rightly place witnesses in relation to the initial text; (2) the quantitative analysis in pre-genealogical coherence is "a tremendous step forward"; (3) even where the CBGM gets the direction of witness relations wrong, it will often correctly detect close relationships; (4) the CBGM can help identify "good witnesses"; and (5) the CBGM is "heuristic, not prescriptive," allowing the user to overrule it whenever there is reason to do so. From Jongkind, "On the Nature and Limitations of the Coherence Based Genealogical Method" (paper presented at the SBL Annual Meeting, San Diego, November 22, 2014), 17–19.

2 Stephen C. Carlson, *The Text of Galatians and Its History*, WUNT II, 385 (Tübingen: Mohr Siebeck, 2015), 43.

3 Bengt Alexanderson, *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method (CBGM) and the Editio Critica Maior (ECM)*, Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014), 117.

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genealogical coherence to help delineate scribal habits, a fundamental task in the search for the initial text.

1 Defining the Initial Text

Before we can consider *whether* the CBGM can help reconstruct the initial text, we first need to address the problem of *what* that text is. For well over a century, textual critics have largely concerned themselves with recovering the "original" or "autographic" text of the New Testament.[4] These two terms have often been used interchangeably and their definition more often assumed than explained. Moreover, that this text was the goal of the discipline remained generally undisputed until the end of the twentieth-century. It was then that some scholars began to question whether the original text could or should be the only goal or even any goal at all.[5] Since then, there has been a growing ferment about what goal should occupy New Testament textual critics and what term should be used to describe it.[6]

Rather than clarify or resolve this debate, the advent of the CBGM has only complicated the matter by introducing an apparently new goal and a new term

4 Notable exceptions are Richard Bentley and Karl Lachmann who aimed only at the text of the fourth-century. See Samuel P. Tregelles, *An Account of the Printed Text of the Greek New Testament with Remarks upon Its Revision upon Critical Principles* (London: Bagster, 1854), 59, 99.

5 See, for example, William L. Petersen, "What Text Can New Testament Textual Criticism Ultimately Reach?," in *New Testament Textual Criticism, Exegesis and Church History: A Discussion of Methods*, ed. Barbara Aland and Joël Delobel (Kampen: Pharos, 1994), 136–151; Bart D. Ehrman, "The Text as Window: New Testament Manuscripts and the Social History of Early Christianity," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 1st ed. (Grand Rapids: Eerdmans, 1995), 361 n. 1; David C. Parker, *The Living Text of the Gospels* (Cambridge: Cambridge University Press, 1997); Eldon J. Epp, "The Multivalence of the Term 'Original Text' in New Testament Textual Criticism," *HTR* 92, no. 3 (1999): 245–281; Reuben Swanson, ed., *New Testament Manuscripts: Variant Readings Arranged in Horizontal Lines against Codex Vaticanus: Romans* (Wheaton: Tyndale House, 2001), xxvii; J. Eugene Botha, "New Testament Textual Criticism Is Dead! Long Live New Testament Textual Criticism!," *HTS Theological Studies* 63, no. 2 (2007): 560–573; Matthew D.C. Larsen, "Accidental Publication, Unfinished Texts and the Traditional Goals of New Testament Textual Criticism," *JSNT* 39, no. 4 (2017): 362–387.

6 See especially Michael W. Holmes, "From 'Original Text' to 'Initial Text': The Traditional Goal of New Testament Textual Criticism in Contemporary Discussion," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 637–688.

to go with it: *Ausgangstext*, or its English equivalent "initial text." Although the discussion has sometimes verged on mere semantics, at its best it has forced textual critics to consider a matter of practical import. The reason is that "depending on the definition of the goal, different approaches to text-critical reasoning are possible."[7] If one concludes that the goal cannot be the "original authorial text,"[8] for example, then appeals to the author's style or theology will have to be moderated accordingly. Furthermore, to the degree that the initial text of the CBGM is not the author's text, then exegetes interested in the authors of the Catholic Epistles must work beyond its results.[9]

To date, there has been little agreement on how best to understand the CBGM's new terms. One can see the problem already in the reviews of the ECM by J.K. Elliott who writes in one that the *Ausgangstext* is "known in some quarters as the original text of the Biblical author" but in another that "we must, however, not be mesmerized into concluding that the Ausgangstext is necessarily the 'original' text, but merely the text that seems to explain the origin of the variants deviating from it."[10]

It should be said that not all seem troubled by the confusion. Eldon Epp suggests that the debate benefits the discipline because the various interpretations for the new terms, as with the old ones, bring with them the opportunity to "enter into dialog about their usage in the *Editio critica maior*."[11] But Epp's belief that these new terms are multivalent is not one shared by the editors of the ECM at INTF. In a 2011 interview, Klaus Wachtel describes Epp's own detailed etymological work on the new terms as "tantalizing," but then adds that it "did not help to understand what we meant by 'initial text.'" For Wachtel, the definition

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7 ECM2, 30*.

8 So David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 25–29.

9 For implications for historical Jesus studies in the case of the Gospels, see Michael F. Bird, "Textual Criticism and the Historical Jesus," *JSHJ* 6, no. 2 (2008): 140–142.

10 J.K. Elliott, "Novum Testamentum Graecum," *ThLZ* 131, no. 11 (2006): col. 1157; idem, "The Editio Critica Maior: One Reader's Reactions," in *Recent Developments in Textual Criticism: New Testament, Other Early Christian and Jewish Literature: Papers Read at a Noster Conference in Münster, January 4–6, 2001*, ed. Wim Weren and Dietrich-Alex Koch, Studies in Theology and Religion 8 (Assen: Royal van Gorcum, 2003), 132. Barbara Aland equates the *Ausgangstext* with the *Urtext* in "Welche Rolle spielen Textkritik und Textgeschichte für das Verständnis des Neuen Testaments? Frühe Leserperspektiven," *NTS* 52, no. 3 (2006): 318.

11 Eldon J. Epp, "In the Beginning Was the New Testament Text, but Which Text? A Consideration of 'Ausgangstext' and 'Initial Text,'" in *Texts and Traditions: Essays in Honour of J. Keith Elliott*, ed. Peter Doble and Jeffrey Kloha, NTTSD 47 (Leiden: Brill, 2014), 70.

is "clear and simple."[12] In what follows, we will try to show that both Wachtel and Epp are wrong. The term has not always been "clear and simple," but it can and should be. We further argue that the term "initial text" has a single, consistent *definition* which allows for multiple *referents* and that this situation can often benefit collaborative work between those with differing views on the nature of that referent.

1.1 *Original Definition and Subsequent Misuse*

The earliest use of the German term *Ausgangstext* in the context of textual criticism is found in Gerd Mink's 1993 essay.[13] The term has most often been used in German to refer to the source of a translation and the prefix *Ausgangs-* is commonly used to refer to a point of departure (e.g., *Ausgangslage*, *Ausgangspunkt*, *Ausgangsfrage*, etc.). Having adopted the term, Mink uses it to refer to the text of a lost witness. He explains that the only witness that his new stemmatic method reconstructs is the "progenitor" (*Stammvater*) of the tradition. This reconstructed text is identified with the "hypothetical, so-called original text" which, in this context, he prefers to call the *Ausgangstext*.[14] He goes on to explain:

> The *Ausgangstext* is the text from which the entire tradition originates and which directly precedes the first relationship in various branches of the tradition. When textual criticism speaks about the original text,

12 See the interview with Mink and Wachtel in Yii-Jan Lin, *The Erotic Life of Manuscripts: New Testament Textual Criticism and the Biological Sciences* (Oxford: Oxford University Press, 2016), 175.

13 Gerd Mink, "Eine umfassende Genealogie der neutestamentlichen Überlieferung," *NTS* 39, no. 4 (1993): 481–499. In personal communication, Mink has said that he first used the term in his 1991 SNTS lecture which became the basis for this article. Both pre-date a 1999 German broadcast involving Barbara Aland which Epp suggests as the first use of the term (Epp, "Which Text?," 61 n. 61). After 1993, the next recorded use is by Wachtel in 1995 who wrote, "Nur die Lesart kann als ursprünglich gelten, die nach inneren und äußeren Kriterien am ehesten als Ausgangstext für die Varianten zur Stelle anzunehmen ist" (*Der Byzantinische Text der katholischen Briefe*, ANTF 24 [Berlin: Walter de Gruyter, 1995], 45). Intriguingly, the term is used in passing as a synonym for "original text" regarding the work of Richard Simon by Jacques le Brun, "Meaning and Scope of the Return to Origins in Richard Simon's Work," *TrinJ* 3, no. 1 (1982): 68.

14 Mink, "Eine umfassende Genealogie," 482: "Der Stammvater der Überlieferung ist nicht eine vorfindlich Größe, sondern der mit einer Reihe von Methoden erschlossen und insofern hypothetische sogenannte ursprüngliche Text, den ich in diesem Zusammenhang als Ausgangstext bezeichnen möchte."

> this *Ausgangstext* is typically meant. It is only with this text that genuine text-critical methods are dealing. Textual stages that may have been situated between the autograph and the *Ausgangstext* are not accessible to text-critical means. We would then be dealing with a linear path between the autograph and the *Ausgangstext* which had left no trace in the manuscript tradition.[15]

Beyond being the first use of the term, this quote is important because it illustrates a crucial aspect of the term that, despite misuse by others, has remained nearly constant in Mink's own use.[16] That aspect is the definition of the term relative to what we have rather than to what we do not have. It is the text *from which* the extant tradition originates. This is a subtle but important difference from traditional aims. Textual critics have often aimed their efforts in relation to what we do not have, namely, the author's text. But Mink suggests that the more proper aim is the *Ausgangstext*. The reason is that there is a methodological gap between the start of the textual tradition as we have it and the text of the autograph itself. Any developments between these two points are outside the remit of textual criticism proper. Where there is "no trace [of the original text] in the manuscript tradition" the text critic must, on Mink's terms, remain silent.[17] It is this methodological gap that I suggest is responsible for much of the confusion and it needs to be considered in more detail before we can propose a solution.

We can start by looking at the consistency in Mink's definitions over the course of the CBGM's development. In his presentation from the 2008 colloquium he explains that the initial text has not survived in any manuscript and must, therefore, be reconstructed.[18] But this only tells us what it is not.

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15 Mink, "Eine umfassende Genealogie," 482: "Der *Ausgangstext* ist der Text, von dem die gesamte Überlieferung ihren Ausgang nimmt und der der ersten Filiation in verschiedene Überlieferungszweige unmittelbar vorausgeht. Wenn die Textkritik vom ursprünglichen Text redet, meint sie im allgemeinen diesen Ausgangstext. Nur über ihn ist mit genuin textkritischen Methoden zu verhandeln. Textstadien, die zwischen dem Autograph und dem Ausgangstext gelegen haben mögen, sind textkritischen Mitteln nicht zugänglich. Wir hätten es dann mit einer linearen Entwicklung zwischen Autograph und Ausgangstext zu tun, die keinerlei Spuren in der handschriftlichen Überlieferung hinterlassen hätte."

16 The term *Ausgangstext* was eventually translated as "initial text" and first appeared in the ECM IV/1.2 (p. 23* n. 4) in 2000 with only a brief definition as "the form of text that stands at the beginning of the textual tradition" and is the aim of the edition.

17 Naturally, this raises the question of how one can identify a gap when one side of it has left no trace.

18 Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presenta-

What it is, is more complicated. It may be (1) the "authorial text," (2) "an edition of the author's text," (3) the "archetype of the tradition," or (4) there may be "more than one initial text."[19] Thus there are a number of possible *referents* for the term and, as far as Mink is concerned, the specific referent must be determined separately for each writing.[20] How one chooses the referent is important because it "governs which internal criteria can be used."[21] As far as Mink is concerned, "The simplest assumption may be that the initial text is a hypothesis for the author's text."[22] But the important point for Mink is that, regardless of the referent, the initial text remains a hypothesis which is open to revision and challenge. Mink's statement that the initial text "should not necessarily be equated with any actual historical reality"[23] is best read as a way to underscore this point. Thus, although Mink gives a number of new referents for the term in this 2008 presentation, his basic definition remains the same: the initial text is the hypothetical text from which the extant tradition developed.

These four referents from Mink are repeated in the introduction of the ECM2. Each one is discussed in turn as it relates to the use of internal criteria. The editors clarify the matter in the case of the Catholic Epistles by saying that "the aim of our reconstruction is a hypothesis about the respective authorial texts." They admit that their hypothesis cannot "claim to be absolutely identical with the authorial text," but that such a goal remains "the most simple assumption" given the lack of evidence for "significant changes" between the authors' text and the archetype of the tradition.[24] For both Mink and the ECM2, the assumption is that the authors' text and the starting point of the extant tradition are the same unless there is reason to suspect otherwise. Obviously, such an assumption may change as they move to other parts of the New

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tion" (Münster: INTF, 2009), 12, http://www.uni-muenster.de/INTF/cbgm_presentation/download.html.

19 Ibid., 13–16.

20 As Mink says, "I think working on each writing of the New Testament we must define what, in this special case, the initial text means" (cited in Lin, *Erotic Life*, 176).

21 Mink, "Introductory Presentation," 16.

22 Ibid., 17. Tommy Wasserman likewise says that "there is good reason to assume that the initial text of Jude is identical with the author's text" although this seems at odds with his prior statement that "the term 'initial text' is appropriate; what we can construct is less than the autograph but more than the archetype." Apparently, the author's text can be reached but the autographic text cannot. See *The Epistle of Jude: Its Text and Transmission*, Coniectanea Biblica New Testament Series 43 (Stockholm: Almqvist & Wiksell, 2006), 122.

23 Mink, "Introductory Presentation," 17.

24 ECM2, 30*.

Testament and, even in the Catholic Epistles, is one that can be falsified with the discovery of new evidence or with better interpretations of the present evidence.

Thus, there is general continuity between Mink and the ECM on both the definition and the possible referents of the term. Beyond this, the consistency begins to break down even among some of Mink's fellow ECM editors. Nowhere is the problem more pronounced than in the published essays from the 2008 colloquium. David Parker, for instance, at first agrees with Mink when he writes that the CBGM and its initial text provide "a way of explaining what happened after it [the initial text] but not what might have gone before."[25] Where Parker diverges from Mink and the ECM is in what he thinks this entails. For Parker, the initial text is emphatically "*not* an authorial text"[26] He goes on to say that the definition of the initial text and his conception of the "living text" of the Gospels are "totally agreed" on "the impossibility of the attempt to recover a single original text."[27] What was merely one possibility in Mink's original definition (namely, the gap between author's text and initial text) has now, for Parker, become a matter of definitional necessity. For Mink and the ECM2, the author's text is not the only possible referent for the initial text, but it is still one possible referent and one that the ECM2, in fact, takes as the simplest hypothesis. For Parker, this is not an option and this is so by definition. What Mink allows and even assumes as a referent for the term, Parker explicitly rejects.

Strikingly, the very next essay in the volume is by Holger Strutwolf, the director of INTF and an editor of the ECM, whose main burden is to show that "the

25 David C. Parker, "Is 'Living Text' Compatible with 'Initial Text'? Editing the Gospel of John," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 19.

26 Ibid., 15; emphasis original. Cf. Parker, *Textual Scholarship*, 25; Klaus Wachtel and David C. Parker, "The Joint IGNTP/INTF Editio Critica Maior of the Gospel of John: Its Goals and Their Significance for New Testament Scholarship" (paper presented at the annual meeting of the SNTS, Halle, 2005), 11, http://epapers.bham.ac.uk/754/1/2005_SNTS_WachtelParker.pdf. Jeffrey Kloha likewise concludes that because the initial text is "the text from which all extant copies derive" it is therefore "not 'what left the pen of the evangelist'" ("Theological and Hermeneutical Reflections on the Ongoing Revisions of the *Novum Testamentum Graece*," in *Listening to the Word of God: Exegetical Approaches*, edited by Achim Behrens and Jorg Christian Salzmann, Oberurseler Hefte Ergänzungsband 16 [Göttingen: Edition Ruprecht, 2016], 177).

27 Parker, "Is 'Living Text' Compatible with 'Initial Text'?," 21. He must, of course, mean the impossibility of *succeeding* at the attempt to recover the original since clearly many have and continue to *attempt* to recover the original text.

quest for the original text does not as such involve contradictions and logical impossibilities."[28] He follows Mink in saying that, so long as there is no evidence to suggest a "radical break" between the author's text and the initial text, we should assume that the original text matches "the reconstructed archetype to which our manuscript tradition and the evidence of early translations and the citations point."[29]

The concluding chapter of the volume by Wachtel tries to resolve the obvious tension between Parker and Strutwolf on this point. But in doing so, Wachtel introduces yet further tensions with Mink's definition. He tries to reconcile Parker and Strutwolf by distinguishing the initial text from both the author's text on the one hand and the archetype of the tradition on the other and by setting the initial text squarely *between* them. Thus the initial text "must be carefully distinguished from the archetype of the tradition, on the one hand, and from the original text of the author, on the other."[30] Confusingly, he goes on to say that scholars engaged in the quest for the original text still "have to be aware that all they can achieve is a hypothesis about the original, and this is what is called 'initial text' in the context of the CBGM."[31] For Wachtel, the initial text is "the result of methodological efforts to approximate most closely the lost text of the author based on all relevant evidence."[32] This last statement seems to conflate what Wachtel has just tried to distinguish.

Unfortunately, the issue is just as confusing in the introduction to the volume co-authored with Michael Holmes. There one finds the same attempt to distinguish the initial text from both the archetype and the original text.[33] The reader

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28 Holger Strutwolf, "Original Text and Textual History," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 41.

29 Ibid.

30 Klaus Wachtel, "Conclusions," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 219.

31 Wachtel, "Conclusions," 219.

32 Ibid. Elsewhere Wachtel closely aligns the initial text with the author's text, writing that in using the CBGM, "We strive to reconstruct a form of the New Testament text that best explains the states of text that are preserved in the manuscripts, *and hence* comes as close as possible to the text of the authors." Klaus Wachtel, "The Coherence-Based Genealogical Method: A New Way to Reconstruct the Text of the Greek New Testament," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 129; emphasis added.

33 Klaus Wachtel and Michael W. Holmes, "Introduction," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael

is there told that it may be surprising to learn that Mink distinguishes the initial text from the archetype. Indeed, it is surprising, but not for the reason Wachtel and Holmes give. They say the distinction may be surprising because it assumes that the initial text antedates the archetype. On the contrary, it is surprising because, in the pages of the very same volume, Mink explicitly allows them to be equated. In his chapter he defines the initial text as "the reconstructed form of text from which the manuscript transmission started" and then adds that "different objectives of reconstruction are possible: authorial text, redactor's text, *or the archetype* of the tradition as preserved."[34] Clearly, then, Mink allows the initial text and the archetype to be equated.

How, then, can Wachtel and Holmes claim that Mink distinguishes them? In support, they cite Mink's 2004 where he says that "the initial text is *not simply* a reconstruction on the basis of the surviving variants, which best explains the emergence of the variants and thus represents the archetype of the tradition."[35] But the reason the initial text is "not simply" the archetype is not because it is something more than that but, rather, because "several hypotheses are possible about the beginnings of the tradition."[36] It may be the archetype but it may not; hence the term cannot *simply* be assumed to refer to the archetype. This being so, Wachtel and Holmes are wrong to claim that the initial text as such is a type of "half-way house" between the author's text and the archetype of the tradition. In fact, depending on the corpus, it may be either one. For the Pauline corpus, one might conceive of the initial text as Paul's own text or one might conceive of it as the text of the Pauline corpus as it was collected by a later editor. Both are possible uses of the term and one simply needs to be clear in any given case (or edition) about how it is being used.

W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 6–7. The same three entities are distinguished in Wachtel and Parker, "Joint IGNTP/INTF," 11 and in Michael W. Holmes, "What Text Is Being Edited? The Editing of the New Testament," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith N. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 102. Cf. the remarks of Wasserman in n. 22 above.

34 Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 143; emphasis added.

35 Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 25–26; emphasis added.

36 Mink, "Contamination, Coherence, and Coincidence," 26.

At this point, the debate may seem like so much pointless semantic gymnastics. But the confusion can turn into a practical problem as it does in the context of conjectural emendation. The issue appears in Wachtel and Holmes's commendation of Mink's conception of the initial text. They approve of Mink because they say that his definition obligates us to subject the "initial text" to the text-critical step of *examinatio* to "determine whether its readings also qualify as authorial."[37] If *examinatio* shows these readings to be less than authorial, then, Wachtel and Holmes argue, we will need to employ the next step of *divinatio* or conjecture.

But, in saying that Mink is "quite right" on this count, Wachtel and Holmes are actually quite wrong. The reason is that, insofar as Mink's initial text can *itself* be conjectured (as at 2 Pet 3.10), it has already gone well beyond *examinatio* to the next step of *divinatio*.[38] In this, Mink's *conception* of the initial text as such cannot require us to consider conjecture as a possibility. If one wants to defend conjecture, it must be by other means as there is nothing in Mink's definition of the initial text itself that *requires* us to consider the possibility of conjecture. Moreover, in cases where the initial text is itself a conjecture, distinguishing between the initial text and the author's text strikes one as rather pointless. At the level of the *Ausgangstext*, what purpose could there be in conjecturing something less than the author's text? As Jan Krans says, "The method [of conjectural emendation] rests on the assumption that autograph and archetype are not identical" and conjecture is thereby concerned with the former rather than the latter.[39] It is hard to imagine how one could persuasively argue that the conjectured initial text is *not* the authorial text. Certainly, in Maas's formulation the point of conjecture is to recover nothing less than the author's text; that is its *raison d'être*.

To say, then, as Holmes does that "the shift from 'original text' (however defined) to 'initial text' involves a shift from an ultimate to a penultimate goal"[40] ignores the use of conjecture, at least in the ECM. Where conjecture is used, the

37 Wachtel and Holmes, "Introduction," 7. For a summary of these steps, see Paul Maas, *Textual Criticism*, trans. Barbara Flower (Oxford: Clarendon Press, 1958), § 2.

38 This is also a problem for Kloha who criticizes the CBGM's pursuit of the initial text on the grounds that "it does not allow full use of the tools available to textual criticism, including the patristic and versional material and most especially the use of conjectural emendation" ("Theological and Hermeneutical Reflections," 174).

39 "Conjectural Emendation and the Text of the New Testament," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, NTTSD 42 (Leiden: Brill, 2013), 614.

40 Holmes, "What Text," 112.

goal is almost certainly the ultimate one of the author's text.[41] The ECM itself seems to recognize this basic point when it says that conjecture is permitted when the initial text is hypothesized to be the author's text.[42] Thus it is not right for Holmes and Wachtel to try to limit the initial text to a stage *between* the archetype and the original text nor to claim that such a limitation obligates one to engage in *examinatio* or *divinatio* since, depending on the editor, the initial text may already *be* the result of one or both. In short, the initial text cannot be categorically distinguished from the archetype or the author's text. In some cases, it may be the former. In the case of conjecture, it seems only reasonable that it be the latter.

1.2 *An Attempt at Clarification*

Perhaps at this point the reader has abandoned all hope and decided simply to avoid the term altogether. I admit sympathy for this view. In some contexts, the term is probably safe to avoid altogether. However, the term has gained traction and it does offer some benefits as explained below so that an attempt at rehabilitation is not so much wasted effort.

As hinted at above, a solution to the confusion lies in a return to Mink's own explanations of the term. The most important feature of his definition is its reference point. On this, Parker is right to note that it is defined in relation to what flows from it rather than what precedes it.[43] Moreover, Mink is consistent in saying that there is, at a minimum, a *definitional* gap between the initial text and the original text of the author.[44] The former is defined relative to what we do have (the tradition) and the latter to what we do not (the original autograph). On this there need be little debate.

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41 Surprisingly, Holmes recognizes the conjecture at 2 Pet 3.10 as the initial text but, somehow, still conceives of the initial text as penultimate. His real concern seems to be with the *assumption* that conjecture is never needed for the New Testament ("What Text," 111–112). This may or may not be a valid concern, but it has little to do with the initial text as such.

42 ECM2, 30*.

43 Parker, "Is 'Living Text' Compatible with 'Initial Text'?," 19.

44 This is how his statement that "the initial text is not identical with the original, the text of the author" should be understood ("Problems," 25). This is made clear by his subsequent statement (p. 26) that "the simplest working hypothesis must be that there are no differences between the original and the initial text (except for inevitable scribal slips). In that case, the reconstruction of the initial text is not only determined by the subsequent tradition (which text form could have been derived from which?), but also by the author's intentions as they come to light in the totality of what we know about him (is a variant more likely to come from the pen of the author or from a copyist?)."

Where the debate should be focused is on whether there is also a *historical* gap, in any particular case, between the initial text and the original text. In this regard, Parker and Epp are not wrong to warn against the naïve assumption that the two are identical. So Epp: "Many of us would feel that Initial Text—if inadequately defined and therefore open to be understood as the First Text or Starting Text in an absolute sense—suggests greater certainty than our knowledge of transmission warrants."[45] Still, Epp and others who share his concern would do well to remember that doubt is a double-edged sword. After all, knowledge about what *cannot* be known is liable to overconfidence just as is knowledge about what *can* be known. It is worth reminding ourselves at this point that proving a negative is often quite difficult.

A better way forward is to simply yield the need for too much certainty either way and instead give the appropriate reasons both for the nature of our textual target and for the relative success we think we have achieved to reach it. In this way, it is perfectly reasonable to claim, as the ECM2 introduction does, that, without evidence to the contrary, the simplest hypothesis is that the editors' initial text in the case of the Catholic Epistles represents the author's original text. This is clear in what it claims to have reached without suggesting any "greater certainty" than is warranted. Certainly in the ECM's case, this goal has not led the editors to think they have always reached it. The forty-three diamonds attest to this.

Whatever the case may be for the Catholic Epistles, the solution to the misunderstanding about the use of the term "initial text" is to distinguish the meaning from the referent. The term *means* "that text from which the extant tradition descends," a definition which allows it to *refer* to any number of historical entities including the author's original text, the archetype, or some editorialized text subsequent to both. The benefit of this understanding is that it may allow those with differing opinions about the referent to nevertheless agree on the editorial text itself. Thus, someone like Parker, who rejects the very concept of an original text for the Gospels and someone like Holmes who does not, may agree substantially on how to arrive at the initial text and even on what that text looks like in many cases. But this does not foreclose the question of what that text represents historically. In this, Parker is right to say, "We can use philology to reconstruct an Initial Text. But we need not then believe that the Initial Text is an authorial text, or a definitive text, or the only form in which the works once circulated."[46] That question can be settled on other grounds. The

45 Epp, "Which Text?," 70.

46 Parker, *Textual Scholarship*, 29. For the same basic point, see Holmes, "From 'Original Text' to 'Initial Text,'" 681.

only qualification to add here is that those who identify the initial text with the author's text will have recourse to intrinsic evidence otherwise not available to those who do not. Thus, it remains important to always state clearly what particular referent is intended. What Emanuel Tov says of the Old Testament applies equally in the case of the New Testament: "In our view, scholars should express an opinion on this issue [of the nature and existence of the original text] that guides them in determining their approach to the differences among textual witnesses."[47] In this way, the ECM's introduction has already modeled the best use of the term "initial text" and its relation to the author's original text.

2 The CBGM as a Meta-Method

To speak of the method for arriving at the initial text brings us to the question of how the CBGM relates to traditional methods. The previous chapter showed how it has adjusted the use of reasoned eclecticism. But Mink has claimed that the CBGM is a "meta-method" which can be used by any number of other methods so long as they "formulate hypotheses about the priority or posteriority of variants, and that is what all text-critical methods will do."[48]

The two main alternative methods to "reasoned eclecticism" used by New Testament textual critics can be distinguished by how they balance internal and external evidence.[49] On the one side is "thoroughgoing eclecticism" which emphasizes the need to consider variants with little or no regard for the age, number, quality, or geographical spread of manuscripts that attest them. In other words, with little regard for external evidence. This is because our knowledge of transmission history is said to be too uncertain such that traditional external criteria are based on unfounded assumptions.[50] Naturally, then, thor-

47 Emanuel Tov, *Textual Criticism of the Hebrew Bible*, 3rd ed. (Minneapolis: Fortress, 2012), 162. In many ways, the discussion about the goal of Old Testament textual criticism mirrors those currently happening about the New Testament. See especially Ronald L. Troxel, "What is the 'Text' in Textual Criticism?" *Vetus Testamentum* 66, no. 4 (2016): 603–626 and the essays in Ronald Hendel, *Steps to a New Edition of the Hebrew Bible*, Text-Critical Studies 10 (Atlanta: SBL, 2016).

48 Mink, "Contamination, Coherence, and Coincidence," 142.

49 For a helpful comparison of the three methods, see the essays in defense of each in David Alan Black, ed., *Rethinking New Testament Textual Criticism* (Grand Rapids: Baker, 2002).

50 J.K. Elliott, "Thoroughgoing Eclecticism in New Testament Textual Criticism," in *The Text*

oughgoing eclecticism places most of the weight on internal evidence. On the other end of the spectrum is the "Byzantine priority method" which begins with external evidence and uses internal evidence in a decisive way only where the external evidence is held to be inconclusive. In practice, this means only where the Byzantine manuscripts are divided such that there is no "overwhelming majority of MSS"[51] in support of one reading against the other(s). Finally, between these two poles is the position of Reasoned Eclecticism which argues that both internal and external evidence need to be considered on a case-by-case basis. This view is both more optimistic on the value of external evidence than thoroughgoing eclecticism and more pessimistic than the Byzantine priority position on the value of certain external evidence.[52] Thus both are needed in any given instance of variation. This last approach is by far the most widely taught and practiced today.

The question is whether the CBGM is truly method-neutral with respect to these other methods. The editors of the ECM themselves readily admit that they use the CBGM with reasoned eclecticism. So it is fair to ask whether the method shows any unintended bias toward the assumptions and needs of this particular method and whether practitioners of the other two methods would find it useful. In what follows, we will contend that, on the one hand, the CBGM addresses a problem that proponents of the Byzantine priority position do not have and, on the other, that the initial results in the Catholic Epistles are incompatible with the foundational assumptions of thoroughgoing eclecticism. Thus, while it is true that the CBGM is a meta-method in the sense that any principles can be used to construct local stemmata, it is not easily compatible with other methods currently practiced.

2.1 *Thoroughgoing Eclecticism*

To begin with thoroughgoing eclecticism, the problem for its use with the CBGM is that the results so far from the Catholic Epistles challenge its basic assumptions about what we can (or cannot) know about the text's transmission history. To illustrate the problem, we can start with what appears to be a point

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of the New Testament in Contemporary Research: Essays on the Status Quaestionis, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed. (Leiden: Brill, 2013), 746; cf. 761.

51 Maurice A. Robinson, "Appendix: The Case for Byzantine Priority," in *The New Testament in the Original Greek: Byzantine Textform*, ed. Maurice A. Robinson and William G. Pierpont (Southborough, MA: Chilton, 2005), 540; emphasis original.

52 Michael W. Holmes, "Reasoned Eclecticism in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 771.

of concord, namely, the distinction between a manuscript's date and the date of its text. J.K. Elliott, the main proponent of thoroughgoing eclecticism, seems to recognize the distinction when he says that the "age [of a manuscript] alone is no help in recovering the original words."[53] In fact, Elliott himself seems to see hope for his own method in the CBGM insofar as "it looks as if the original or *Ausgangstext* could theoretically be located anywhere in the manuscript tradition and that the direction of change could be manifested in any other manuscript(s): manuscripts are merely 'tradents' of the tradition."[54]

In fact, the agreement is only superficial on this point. Elliott explains that a manuscript's date is useless "unless one can be sure how many stages exist between any manuscript and the original, and unless one knows what changes were made at each copying."[55] In short, unless one knows its genealogical history. While the CBGM cannot (and does not) claim to recover lost stages and all their changes, it does claim to relate witnesses to one another in such a way that *some* witnesses are shown to have a greater portion of initial readings. Such manuscripts are *de facto* more important for establishing the overall initial text. In this way, it is hard to see how the results of the CBGM can be compatible with Elliott's level of relativism about the value of manuscripts.

This hardly means that the CBGM will lead one to claim that any one "manuscript or group contains the monopoly of original readings" as Elliott charges other methods of wrongly doing.[56] But, of course, the choice is hardly between treating witnesses as if they have a "a monopoly of original readings" and treating no witnesses as, overall, more reliable than others. Clearly, the results of the CBGM in the Catholic Epistles show that not all witnesses are created equal in relation to the initial text. Thus, to the degree that thoroughgoing eclecticism is based on the view that "external evidence as such is of little relevance,"[57] it is incompatible with the CBGM's results.

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53 Elliott, "Thoroughgoing Eclecticism," 746. Cf. Mink who says, "What we have from the early phases of transmission is not likely to be representative of the text in those times; therefore, we have to rely on later sources to trace older variants" ("Contamination, Coherence, and Coincidence," 146).

54 Elliott, "Thoroughgoing Eclecticism," 763–764. Despite his numerous reviews of the ECM volumes over the years, Elliott's only other explicit comment on the implications of the CBGM for his own method is when he writes, "If this approach [of the CBGM] is sound, it certainly behooves us to treat all mss. carefully as we move from book to book, and even within one book in the larger texts, of course" ("Novum Testamentum Graecum," col. 1157).

55 Elliott, "Thoroughgoing Eclecticism," 746.

56 Ibid., 745.

57 Ibid., 761.

In one respect, however, Elliott's position seems to accord well with the CBGM. Over the years he has urged textual critics to do their work "eclectically without bowing to preconceived theories about the alleged superiority of certain witnesses" and only then "review the behavior of individual witnesses—in effect, rate them" so that "those that fall below a certain level of accuracy would in the future be regarded with some suspicion."[58] In other words, witnesses should be consistently evaluated on internal grounds and only then assigned a relative weight. This statement sounds not unlike Mink when he warns against sorting witnesses into "types, families, or groups" at the outset of the CBGM and, instead, says that we should focus on individual witness relationships by a study of their variant relations.[59] Of course, Mink thinks that some circularity between these two is inevitable. But Elliott's proposal seems to suggest a way to break the circle by initially making all decisions on internal grounds. After this initial work, external evidence in the form of genealogical coherence could be brought to bear on difficult cases. The question is whether thoroughgoing eclectics would accept the results of such a method. Elliott himself, after proposing it says that, despite demanding "an enormous amount of labor—I cannot claim that that [deducing the reliability of witnesses] is an overriding interest or concern of thoroughgoing eclecticism."[60] Given that the CBGM does no small amount of labor to determine the relative value of witnesses, it is hard to see what reasonable objection Elliott could have to the CBGM's results.

The problem is that those results appear to falsify his own method. Wachtel has made the same point:

> If Lachmann's aim was *recensere sine interpretatione* and reasoned eclecticism stands for *recensere cum interpretatione*, then G.D. Kilpatrick's and J.K. Elliott's "thoroughgoing eclecticism" means *interpretari sine recensione*. But after Mink's presentation of results achieved by the CBGM, the existence of coherence, that is, of measurable structures inherent in the transmission of the New Testament text, cannot be denied.[61]

Insofar as thoroughgoing eclecticism rejects the weight assigned to various witnesses and the attempt to relate them, it is incompatible with the results of the CBGM. Thus, the claim that the CBGM is a meta-method does not apply to

58 J.K. Elliott, "The Case for Thoroughgoing Eclecticism," in *Rethinking New Testament Textual Criticism*, ed. David Alan Black (Grand Rapids: Baker, 2002), 123.

59 Mink, "Contamination, Coherence, and Coincidence," 148.

60 Elliott, "Case," 123.

61 Wachtel, "Conclusions," 224.

thoroughgoing eclecticism. Moreover, to the degree that the CBGM's results are reliable, they stand as incompatible with thoroughgoing eclecticism's grounding assumptions.

2.2 *Byzantine Priority*

If the CBGM's results are incompatible with thoroughgoing eclecticism, its assumptions and purpose make it largely irrelevant to those who hold the Byzantine priority position. This is because proponents of this method hold that "the original text clearly can be expected to appear within an aggregate consensus of its manuscripts"[62] which is to say "within whatever texttype might be overwhelmingly attested within the manuscript tradition, to the exclusion of all others."[63] Since such a text-type is said to be the Byzantine, it follows that all other textual groups descend from it. Given the unity of the Byzantine manuscripts, the Byzantine priority position starts with a view of the text's history that resolves the vast majority of textual differences. Only where the Byzantine witnesses are widely split does the proponent of this view need to use internal criteria.

Since the CBGM uses the editor's own textual decisions to produce genealogy, it essentially inverts the Byzantine priority position. Thus the CBGM would "work" for someone holding this position, but it would hardly be needed. Since their position settles most variations used by the CBGM, the results could only confirm their preconceived decisions. As Wachtel says, "If one is sure that the Byzantine reading is the initial reading at each variant passage, then there is no need to apply a method designed to keep track of every single assessment."[64]

This can be demonstrated by doing exactly what Wachtel suggests. With the help of the team in Münster, a fresh copy of the CBGM was created for this study that allowed me to use the CBGM on my own local stemmata. To test Wachtel's suggestion, I used the Robinson-Pierpont edition of the Byzantine text form as the initial text in all places of variation.[65] Wherever this text differed from the initial text chosen by the editors of the ECM, the two readings

62 Maurice A. Robinson, "The Case for Byzantine Priority," in *Rethinking New Testament Textual Criticism*, ed. David Alan Black (Grand Rapids: Baker, 2002), 136.

63 Robinson, "Appendix," 557.

64 Wachtel, "Conclusions," 223. Stephen Carlson claims that the CBGM is incompatible with the Byzantine priority position because of the CBGM's "use of local genealogies" (*Text of Galatians*, 41 n. 156). But he seems to have confused the local genealogical method here with the CBGM (cf. Mink, "Contamination, Coherence, and Coincidence," 142).

65 Maurice A. Robinson and William G. Pierpont, *The New Testament in the Original Greek: Byzantine Textform* (Southborough, MA: Chilton, 2005).

were switched in the local stemmata. To isolate the effects of this change, no other variant relationships were changed. In all, this resulted in a change to 283 local stemmata. This amounts to just over 9 percent of variant units in the CBGM. The full results are publicly available at http://intf.uni-muenster.de/gurry. Readers are encouraged to examine the results in greater detail there. Unfortunately, technical difficulties meant that in eight places the changes did not take effect.[66] The result in these eight cases is that the A witness does not register as the Byzantine reading as it should.[67] But this number is too small to affect the results in any significant way. These results are, it turns out, completely in keeping with Wachtel's prediction. This can be seen by comparing the predominant textual flow diagrams for the Catholic Epistles with the ECM2 as the initial text (Figure 23) and with the Byzantine text as the initial text (Figure 24).

A number of isolated portions of the flow remain unchanged and the most tight-knit groups are generally unaffected. The witnesses below 35, for example, shift only slightly and the same is true of those under 307, 424, and 642. The most significant shift naturally occurs just below the A witness. The only witnesses found at this level in both diagrams are 025, 81, 436, and, surprisingly, 03. Just as important is the fact that both diagrams have a large number of witnesses directly below the A witness. Mink has explained the large number of witnesses deriving directly from A as "a reflection of the fact that from the first millennium of the textual tradition only a very small percentage of witnesses has been preserved."[68] In this way, he provides a historical explanation for the textual flow's form. But given that we have the same basic structure at the top of the diagram where the Byzantine text is the initial text we should conclude that this structure has more to do with how textual flows are constructed than with any particular historical explanation. In particular, if the A witness was removed from the diagram, witness 617 would take its place as the only witness without any potential ancestors other than A. In this case, there would only be eight witnesses directly below it. The other sixteen witnesses currently on the second tier would be spread throughout the flow. This suggests that Mink's historical explanation is unjustified. But as we will see in chapter five, the textual flow diagrams are not the place in the CBGM to go when seeking historical explanations.

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66 My thanks to Volker Krüger for his Herculean efforts to sort out these problems.

67 There are three places in James and five in 3 John. They can all be identified using the "View Differences" link in the "Compare Witnesses" module when comparing, for example, A to 617.

68 Mink, "Problems," 48.

More pertinent to our question about the use of the CBGM for the Byzantine priority view, it may be that the results shown here could be of value in deciding those places where the Byzantine tradition is split. But whether the work required for that would be warranted is another question. As it is, there seems little appeal for the Byzantine prioritist to make use of a method that asks them to relate thousands of variants to resolve what is no more than a dozen differences in the Byzantine tradition in the Catholic Epistles.[69] In this way, the CBGM is generally irrelevant to the Byzantine priority method.

2.3 *Conclusion*

To return to our starting question, we conclude that the claim of the CBGM to be a "meta-method" needs to be qualified. In the case of thoroughgoing eclecticism, the results of the CBGM and the relations among witnesses are inconsistent with treating all witnesses equally. In particular, it is inconsistent for an editor to ignore the implications of their own decisions across a span of variations. Given the CBGM's ability to record their own decisions, thoroughgoing eclectics can no longer claim that all witnesses are of equal value for determining the initial text. Their own decisions will show that this is not the case.

In the case of the Byzantine priority position, the CBGM serves little purpose since the view that the original text has been preserved somewhere in the Byzantine tradition vastly simplifies the text critic's job. As we saw in our results above, the comprehensive picture that emerges based on text-critical decisions as made by a Byzantine prioritist looks very much like the picture that determined those text-critical decisions in the first place. The methodological problem of circularity that the CBGM tries to solve is one the Byzantine priority position does not have. Thus, the CBGM would have little relevance for establishing the initial text within that method.

Having said this, it is fair to say that the CBGM does not demand that any predetermined evidence be followed when it comes to constructing local stemmata. The computer is, obviously, agnostic to the views of the human editor. But it is significant that the CBGM sprang from one specific methodological viewpoint and it is clearly designed to best serve that view. The method for which the CBGM has the most value is reasoned eclecticism. As one of that method's most significant defenders has recognized, the eclectic method makes it "easy to become so focused on each piece of the [textual] mosaic that it is difficult to see the pattern of the mosaic as a whole" and because of that, the CBGM has

69 I counted twelve alternate Byzantine readings in the margin of the Catholic Epistles in the Robinson-Pierpont edition.

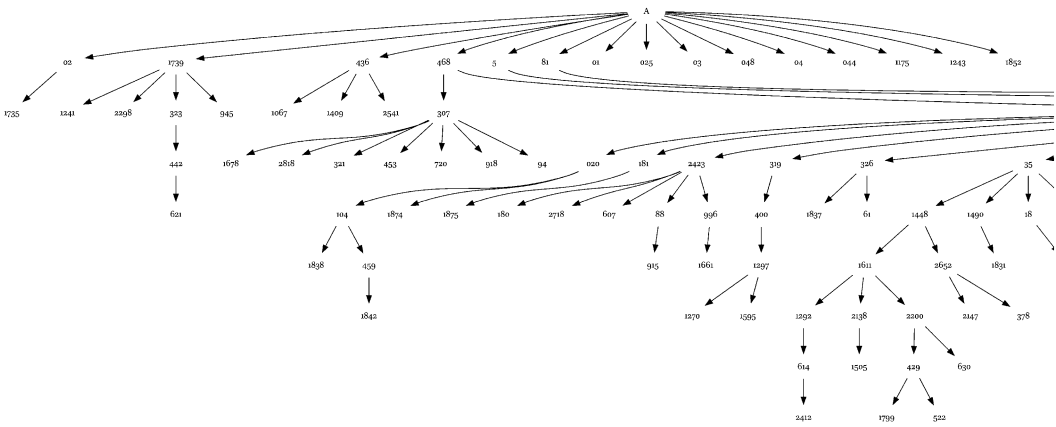


FIGURE 23 *The predominant textual flow diagram for the entire Catholic Epistles with the initial text defined according to the* ECM2

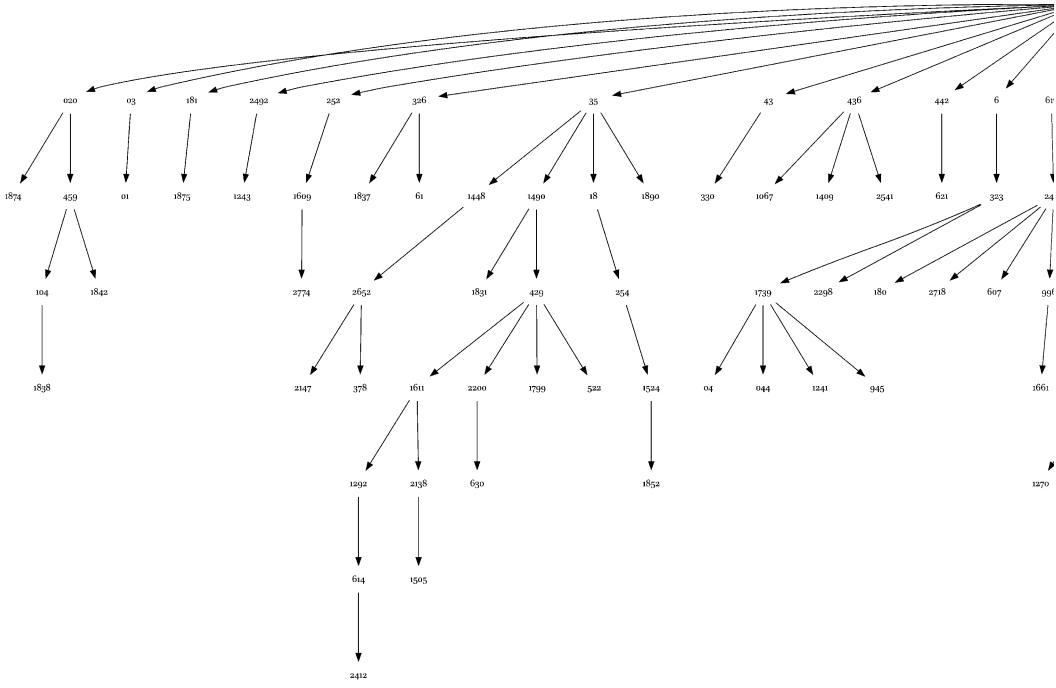
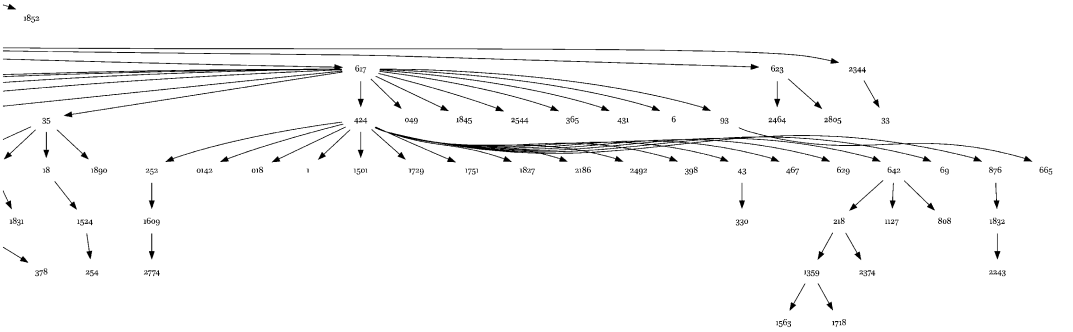


FIGURE 24 *The predominant textual flow diagram for the entire Catholic Epistles with the Byzantine text set as the initial text*


1852
617
623
2344
35
424
049
1845
2544
365
431
6
93
2464
2805
33
18
1890
252
0142
018
1
1501
1729
1751
1827
2186
2492
398
43
467
629
642
69
876
665
1831
1524
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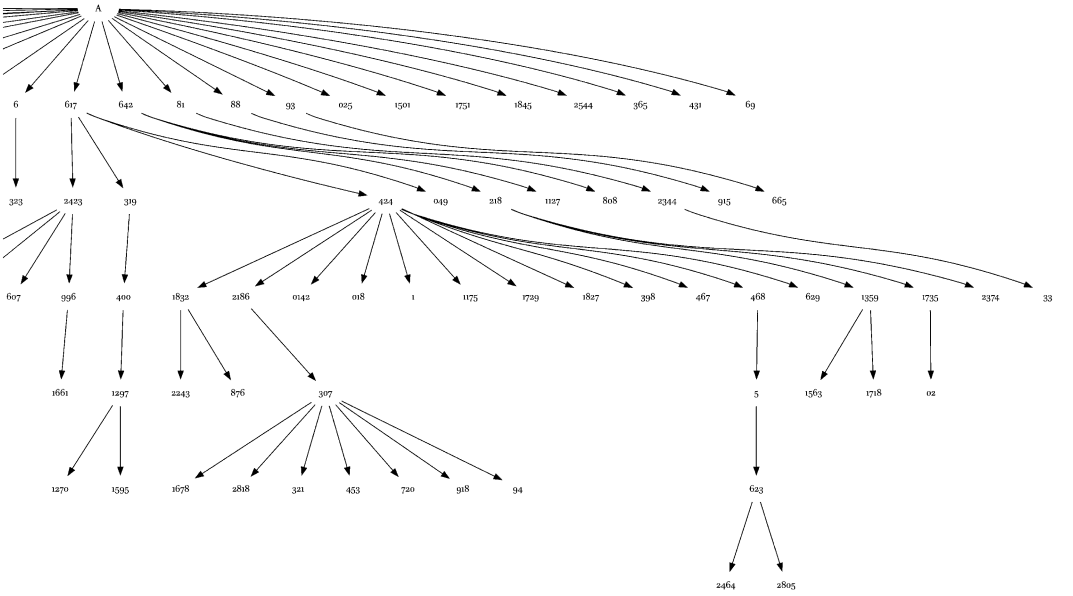
339
218
1127
808
1832
378
254
2774
1359
2374
2243
1563
1718


A
6
617
642
81
88
93
025
1501
1751
1845
2544
365
431
69
323
2423
319
424
049
218
1127
808
2344
915
665
607
996
400
1832
2186
0142
018
1
1175
1729
1827
398
467
468
629
1359
1735
2374
33
1661
1297
2243
876
307
5
1563
1718
02
1270
1595
1678
2818
321
453
720
918
94
623
2464
2805

real value in that it "offers the textual critic a means by which to assess and analyze the larger implications of individual textual decisions."[70] But, for the two primary methodological alternatives to reasoned eclecticism, the CBGM is either a direct challenge (in its results) or largely unnecessary (in its aims).

3 Using Coherence to Detect Coincidental Agreement

If the CBGM holds the most promise for practitioners of reasoned eclecticism, it will be valuable to consider one of its particular contributions to internal evidence. One of its most promising features in this regard is the CBGM's claim to detect cases of coincidental agreement using coherence. The promise of such is difficult to overstate since coincidental agreement is a problem that confronts all traditions regardless of contamination. As W.W. Greg rightly says, apart from the assumption that agreements are not coincidental "no inference as to the relation of manuscripts would be possible."[71] The fact that this is so often not a safe assumption is what makes coincidental agreement such a problem. The CBGM attempts to detect such coincidental agreement by considering the level of genealogical coherence in an attestation together with the nature of the variation in question. The term used by Mink to describe genealogically significant readings is "connective." The basic principle is that variants "connect" their witnesses genealogically "(i) if the witnesses generally agree to such a degree that a coincidental match can be excluded or (ii) if the variant is too extraordinary to have emerged repeatedly."[72] Conversely, if a variant is supported by two generally dissimilar witnesses, it may be a candidate for coincidental agreement depending on its nature.

3.1 *Precedent for the Principle*

Although never applied in such detail before, this basic principle of the CBGM has been suggested by others in the past. E.C. Colwell, for example, in his work on method for evaluating scribal habits, suggested that "since corruption

70 Michael W. Holmes, "Working with an Open Textual Tradition: Challenges in Theory and Practice," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 78. For a similar appraisal on the CBGM, see Holmes, "Reasoned Eclecticism," 793.

71 W.W. Greg, *The Calculus of Variants: An Essay on Textual Criticism* (Oxford: Clarendon Press, 1927), 19 n. 1.

72 Mink, "Contamination, Coherence, and Coincidence," 143.

was universal, identical singular readings with only minor scattered support elsewhere should be assumed to be coincidental in these agreements—unless other external evidence establishes relationship."[73] Colwell's term "identical singular readings" is, of course, nonsensical if singular readings are defined absolutely. But Colwell is apparently thinking of what others have called instead "sub-singular readings." Gordon Fee defined such readings as "a non-genetic, accidental agreement in variation between two MSS which are not otherwise closely related."[74] Thus, he makes almost the same point as Colwell about the relationship of overall agreement between witnesses and their agreement in any particular case. For his part, Fee argues that detecting coincidental agreement requires some prior judgment about manuscript relationships that is based both on weighing and counting agreements. We will return to the question of weighing agreements in chapter six. For now, it is enough to point out that Fee's basic principle is the same as Colwell's and that, although the CBGM applies it much more broadly, its shape is the same: an agreement between relatively dissimilar witnesses is likely to be coincidental unless something about the variant itself suggests otherwise. A rather remarkable anticipation of the CBGM on this point is found in Vinton Dearing who helped pioneer the use of computers for textual criticism. His PRELIMDI software was designed to choose manuscript groups based "on the theory that normal copying is the most likely cause of agreement and will produce the most agreements, so that the more infrequent the agreement the more likely it is to be non-significant."[75] Like the CBGM, his software allowed the editor to intervene and override the computer's relationships based on an inspection of the readings themselves.[76]

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73 E.C. Colwell, "Method in Evaluating Scribal Habits: A Study of $\mathfrak{P}^{45}$, $\mathfrak{P}^{66}$, $\mathfrak{P}^{75}$," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 123. For an endorsement on this point, see also James Royse, *Scribal Habits in Early Greek New Testament Papyri*, NTTSD 36 (Leiden: Brill, 2008), 66 n. 3. We will return to Royse's contribution in the next chapter.

74 Gordon D. Fee, "On the Types, Classification, and Presentation of Textual Variation," in *Studies in the Theory and Method of New Testament Textual Criticism*, SD 45 (Grand Rapids: Eerdmans, 1993), 67. Like the CBGM, Epp notes that Fee's proposal requires that we also take the nature of the agreement into consideration. See Eldon J. Epp, "Toward the Clarification of the Term 'Textual Variant,'" in *Studies in the Theory and Method of New Testament Textual Criticism*, SD 45 (Grand Rapids: Eerdmans, 1993), 54.

75 Vinton A. Dearing, "Computer Programs for Constructing Textual Stemmas on Genealogical Principles: The Theoretical Basis of PRELIMDI and ARCHETYP," in *La pratique des ordinateurs dans la critique des textes* (Paris: Éditions du Centre national de la recherche scientifique, 1979), 118.

76 One might also note that this same principle explains the problem of the so-called "minor

3.2 *The Question of Circularity*

If the CBGM's principle for detecting coincidental agreement has precedent, the question is whether (or when) it becomes circular. When is it a problem to use agreement to detect non-agreement? The answer is found in stating the principle more accurately: it is the use of *total* agreement to interpret whether *select* agreements might be coincidental.[77] In this form, the procedure is not necessarily circular. Mink's formulation is that variants are connective when their witnesses "generally agree" to such a degree that coincidental agreement can be ruled out. As Mink elsewhere notes, all witnesses are related to each other somehow, the only question is how and how closely.[78] This is where a knowledge of a particular witness's pre-genealogical context becomes important. An agreement of 95 percent may be high for one of the witnesses involved but not the other.

Still, we are faced with the issue of how many of the agreements that make up pre-genealogical coherencies in the CBGM are themselves coincidental and whether such agreements can legitimately be used to detect other coincidental agreements. It is difficult to believe that over the course of 3,043 places of variation, the degree of false agreement would be so high that certain otherwise close agreements would cease to be such. But there is no way to know this with certainty. Fortunately, the CBGM allows the editor's full judgment to overrule such levels of coherency in any particular variation. Like much in the CBGM, the results from the computer are not taken on their own but are evaluated using the editor's knowledge of the variation in question. In this way, the editor is never forced to treat any given agreement as significant, particularly in the

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agreements" between Matthew and Luke against Mark in the Synoptic problem. In isolation, such agreements appear coincidental, but when taken as a whole, they begin to look suspiciously genealogical. See, for example, Andreas Ennulat, *Die "Minor Agreements": Untersuchungen zu einer offenen Frage des synoptischen Problems*, WUNT II 62 (Tübingen: Mohr Siebeck, 1994), 1–18; Frans Neirynck, *The Minor Agreements of Matthew and Luke against Mark with a Cumulative List*, Bibliotheca Ephemeridum Theologicarum Lovaniensium 37 (Leuven: Leuven University Press, 1974), 51–195; and the essays in Georg Strecker, ed., *Minor Agreements: Symposium Göttingen 1991*, Göttinger Theologische Arbeiten 50 (Göttingen: Vandenhoeck & Ruprecht, 1993).

77 My thanks to Gerd Mink for clarifying this point in our meeting on January 28, 2016.

78 Mink, "Contamination, Coherence, and Coincidence," 187 n. 77. As Michael Reeve points out, any identification of a manuscript as a witness to a particular literary work already puts it into some relationship with all other witnesses to that same work. See Michael D. Reeve, "Shared Innovations, Dichotomies, and Evolution," in *Manuscripts and Methods: Essays on Editing and Transmission*, Storia e letteratura (Rome: Edizioni di storia e letteratura, 2011), 59.

construction of the global stemma. Still, it would be useful if future versions of the method allowed for agreements deemed coincidental to be left out of the method from start to finish. This would provide greater consistency.

4 Conclusion

In this chapter, we have reviewed several methodological questions related to the CBGM's attempt to recover the initial text of the tradition. This involved a consideration of the meaning and referent of the term "initial text" (*Ausgangstext*), the CBGM's claim to be a meta-method, and, finally, the validity of using overall agreement to detect coincidental agreement. In the first case, we argued that Mink's consistent definition of the term relative to the extant tradition should be followed but that the precise referent of the term needs to be specified in any given case. In addition, we argued that the definitional gap between the initial text and the author's original text does not justify an assumed historical gap between these two. Rather, a historical gap—whether affirmed or denied—requires its own justification.

Part two found reason to reject the claim that the CBGM is a "meta-method" at least regarding reasoned eclecticism and Byzantine priority. In the case of thoroughgoing eclecticism, we argued that such a method is inconsistent with the results of the CBGM since they show that not all witnesses are of equal value in reconstructing the initial text. In the case of the Byzantine priority position, we found that the CBGM is essentially unnecessary insofar as that method's results can be predicted based on its own starting assumptions. A test using the Byzantine text form as the initial text confirmed that there would be little reason to use the CBGM in such a case except perhaps to explore in more detail the development of the initial text.

Finally, we briefly looked at the CBGM's use of agreement to detect coincidental agreement as an aid in reconstructing the initial text. We agreed with Mink that pre-genealogical coherence provides a valuable tool for detecting such cases. But alongside this general endorsement, we also argued that once coincidental agreements are identified, they should not be used to draw any further genealogical conclusions in the CBGM. They should be left out of further procedures in the method. To do otherwise is inconsistent. Thus, they should not be considered in some cases in the textual flow diagrams and should be avoided in constructing the global stemma. Despite these limits, the value of being able to detect coincidental agreement holds promise beyond studying individual variants and the next chapter will address its value for studying scribal habits beyond singular readings.

CHAPTER 4

Scribal Tendencies in James

The previous chapter detailed the precedent for the CBGM's use of coherence to isolate cases of possible coincidental agreement between witnesses. This chapter considers one way this use of coherence can improve our understanding of the transmission of the Greek New Testament. Specifically, it provides a case study in using coherence to delineate the types of mistakes that scribes made in copying the text. Such "scribal tendencies" are a crucial aspect of text-critical practice as they help to distinguish authors from the scribes who miscopied them. The importance of knowing such "transcriptional probabilities" is that "without its aid textual criticism could rarely attain any high degree of security."[1] The more we know about the mistakes scribes tended to make, the more text-critical confidence we gain.

Given its ability to suggest coincidental agreement and to link witnesses with potential ancestors, the CBGM has been proposed as a way forward in our understanding of transcriptional probabilities. The present chapter will test the viability of this use of the CBGM. This is done in comparison with the study of singular readings, currently the most popular method. By applying both methods to James, we can compare the strengths and weakness of each. To anticipate our conclusion, we will argue that what the CBGM sacrifices by way of security in detecting scribal readings, it more than makes up for by including a much larger amount of data. We close with methodological reflections, concluding that the way forward is to be found in leaning more on our own text-critical judgments rather than trying to avoid them. This conclusion runs against the grain of much recent scholarship on scribal habits.

1 Method

1.1 *Previous Study*

The consideration of the types of changes introduced by scribes has received significant attention from New Testament text critics for some time now.[2] The

1 B.F. Westcott and F.J.A. Hort, *The New Testament in the Original Greek: Introduction, Appendix*, 2nd ed. (London: Macmillan, 1896), 24.

2 This is apparently not true in other textual traditions. L.D. Reynolds and N.G. Wilson write

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main problem such studies have tried to overcome is how to identify scribal changes without access to the scribe's exemplar. Despite the abundance of manuscript evidence for the New Testament, the number of manuscripts with extant exemplars is small.[3] As a result, scholars have looked for alternate ways to identify and catalog scribal changes.

The most prominent approach has been to isolate and study those readings found only in a single known manuscript. Westcott and Hort were the first to draw attention to such "singular readings" as a distinct category. Their primary interest in such readings—and this has not always been appreciated by more recent studies—is that their two prized manuscripts (01 and 03) often stood alone from the rest of the tradition as they knew it.[4] Their interest in understanding the proclivities of 01 and 03 was so that they could better determine which singular readings in each manuscript had "a better title to consideration"[5] to being original. In their case, it was not a question of whether 01 and 03 each preserved original singular readings; they assumed they did. Rather, the question was how to identify them.

It was E.C. Colwell who shifted Westcott and Hort's approach by seeing the value of singular readings not simply to "increase skill in the evaluation of that manuscript" but also "to increase skill in the evaluation of readings" in general.[6] For Colwell, such a study was not aimed at identifying which singulars may claim originality because, quite unlike Westcott and Hort, his interest in singulars hinges entirely "on the assumption that these readings are the creation of the scribe."[7] As such, they give us clear access to the scribe's work as opposed to the author's. In this, it is ironically Colwell's *rejection* of Westcott and Hort's primary goal in studying singular readings (identifying which ones are original) that becomes the backbone for his own way of determining tran-

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that "scribal errors have never been made the subject of a statistical study, and so it is not possible to establish with any degree of precision the relative frequency of the various types." See their *Scribes and Scholars: A Guide to the Transmission of Greek and Latin Literature*, 4th ed. (Oxford: Oxford University Press, 2013), 223.

3 The NT.VMR lists eleven *Abschriften*: Dabs (2), 9abs, 30abs, 96abs, 205abs, 1160abs, 1909abs, 1929abs, 1983abs, 2036abs.

4 Westcott and Hort, *Introduction*, 230–250.

5 Ibid., 233.

6 E.C. Colwell, "Method in Evaluating Scribal Habits: A Study of P^{45}, P^{66}, P^{75}," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 108.

7 Colwell, "Scribal Habits," 108. In this, Colwell was anticipated by W.W. Greg who recognized that "since every manuscript contains variations from its immediate source, any reading supported by one manuscript alone may have originated in that manuscript" (*The Calculus of Variants: An Essay on Textual Criticism* [Oxford: Clarendon Press, 1927], 19).

scriptional probability. Of course, it must be borne in mind that Colwell had the benefit of a significant increase in available New Testament manuscripts so that the number of singular readings in 01 and 03 was reduced by his time.

Colwell applied his method to three New Testament papyri (P45, P66, and P75), but it was James Royse who refined the method and remains its most accomplished practitioner. In his original dissertation and especially its published form, he re-examined Colwell's papyri and added three more (P47, P46, P72).[8] Since Royse, the study of singular readings has continued apace.[9] The most-discussed finding of Royse's work has been the conclusion that scribes of the early papyri omitted text more often than they added it. Additional study has found the same to be true in majuscules, minuscules, and even lectionaries.[10] From his own results, Royse suggests that a new canon of transcriptional probability should be formulated: so far as the early papyri are concerned, he says we should prefer the longer reading over the shorter reading except in mitigating circumstances.[11]

In Colwell's formulation, the value of singular readings is that they give us knowledge of "an individual scribe's [copying] habits" and, by accumulation

8 James R. Royse, "Scribal Habits in Early Greek New Testament Papyri" (Ph.D. diss., Graduate Theological Union, 1981); idem, *Scribal Habits in Early Greek New Testament Papyri*, NTTSD 36 (Leiden: Brill, 2008). Two other dissertations that considered singular readings at this time are Larry W. Hurtado, *Text-Critical Methodology and the Pre-Caesarean Text: Codex w in the Gospel of Mark*, SD 43 (Grand Rapids: Eerdmans, 1981) and Maurice A. Robinson, "Scribal Habits among Manuscripts of the Apocalypse" (Ph.D. diss., Southwestern Baptist Theological Seminary, 1982).

9 See especially Peter M. Head, "Observations on Early Papyri of the Synoptic Gospels, Especially on the 'Scribal Habits,'" *Biblica* 71, no. 2 (1990): 240–247; idem, "The Habits of New Testament Copyists: Singular Readings in the Early Fragmentary Papyri of John," *Biblica* 85, no. 3 (2004): 399–408; Juan Hernández, Jr., *Scribal Habits and Theological Influences in the Apocalypse: The Singular Readings of Sinaiticus, Alexandrinus, and Ephraemi*, WUNT II 218 (Tübingen: Mohr Siebeck, 2006); Dirk Jongkind, *Scribal Habits of Codex Sinaiticus*, Texts and Studies Third Series 5 (Piscataway, NJ: Gorgias, 2007), 131–246; Andrew Wilson, "Scribal Habits in Greek New Testament Manuscripts," *Filología Neotestamentaria* 24 (2011): 95–126.

10 A table summarizing results from Royse, Robinson, Head, Hernández, and Wilson, can be found in Andrew Wilson, "Scribal Habits and the New Testament Text," in *Digging for the Truth: Collected Essays Regarding the Byzantine Text of the Greek New Testament: A Festschrift in Honor of Maurice A. Robinson*, ed. Mark Billington and Peter Streitenberger (Norden: FocusYourMission KG, 2014), 23. The specific application of the method varies somewhat between these authors.

11 Royse lists as exceptions places where the longer reading is late or where it arose by harmonization or by an attempt at grammatical improvement (*Scribal Habits*, 735).

of data, "the habits of scribes in general."[12] In the absence of the exemplars of almost all our extant manuscripts, singular readings present themselves as our best source for divining those readings which are genuinely the scribe's rather than his predecessors'. As Royse puts it, "What we need to do is to find a way of discerning incorrect readings—i.e., to use the positive term, scribally created readings—when the scribe's *Vorlage* is not extant."[13] For Royse and many others, singular readings provide such a way.

1.2 *The Problem with Singular Readings*

Despite its wide use, the study of singular readings is not without its problems. These all derive from the notion that singular readings as a category match the category of scribally-created readings. This is not always the case. As Royse discusses, there are obviously far more scribally-created readings than there are singular readings and there may even be some singular readings that are authorial rather than scribal.[14] Royse argues convincingly that this last category, even if granted, must be small to the point of being negligible in a study as large as his. But the former category—readings which scribes created and which now exist in multiple manuscripts—is much more problematic. In this case, Royse admits that there is no way to determine ahead of time which non-singular readings are also scribally-created readings. Because of this, a list of singulars "will contain only some of the scribally created readings"[15] and, by his own admission, this presents "a major difficulty."[16]

Despite these problems, the study of singular readings continues to appeal to New Testament textual critics. The reason seems to be that, even if the method fails to give us all the right data, it does promise to exclude any wrong data.[17]

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12 Colwell, "Scribal Habits," 108.

13 Royse, *Scribal Habits*, 2008, 37. We should note that there is a difference between isolating the work of scribes vis-à-vis authors and isolating the work of a *particular* scribe vis-à-vis other scribes.

14 For his thorough discussion, see Royse, *Scribal Habits*, 39–63. Note the caution of Westcott and Hort on the matter: "Complete discrimination [between singulars which are the creation of the scribe and those which are not] is of course impossible in the absence of the exemplar or exemplars; but every approximation to it is a gain" (*Introduction*, 232).

15 Royse, *Scribal Habits*, 2008, 42. See the further concerns expressed by Peter Head and Dirk Jongkind in Juan Hernández, Jr. et al., "Scribal Habits in Early Greek New Testament Papyri: Papers from the 2008 SBL Panel Review Session," TC 17 (2012): 13, 14–15.

16 Ibid., 741.

17 In Royse's words: "The resulting list of singulars is not, as noted earlier, meant to be a list of *precisely* the scribally created readings, but is supposed here to consist *exclusively* of scribally created readings" (Royse, *Scribal Habits*, 55; emphasis added). There is also

As Royse concludes, taking a phrase from Westcott and Hort, only singular readings are those which "can with moral certainty be assumed to have been introduced by the scribes."[18] As should be clear from our discussion of Colwell, this phrase ("moral certainty") is not found in Westcott and Hort's discussion of singular readings, a point we shall return to in due course. It is, rather, in their discussion of transcriptional probability and this explains its adoption by Royse. The question is what selection of truly scribally-created readings is represented by singular readings. If an error can be made once in a particular context, it can almost certainly be made twice; and the more a text is copied the more possibility there is that two (or more) scribes will make the same mistake independently of the other(s).[19] In fact, once we realize that, at any given point of variation, all readings bar one are scribally-created, we must conclude that, since most variants are attested by more than one witnesses, the majority of scribally-created readings are left out by the study of singular readings.

Specific evidence for this can be found in Sinaiticus. In his study of about ten chapters of 1 Chronicles, Dirk Jongkind found that thirteen of the ninety corrected readings were attested elsewhere. Since the pre-corrected readings are all scribally-created, it follows that 14 percent of these scribally-created readings would be overlooked by a study limited to singular readings (if uncorrected singular readings are included, the percentage drops to four). Jongkind notes that the paucity of witnesses to the Greek text of 1 Chronicles compared to the abundance for the New Testament means that "the scribes [of the New Testament] must have made considerably more errors in copying the exemplar than actually show up as singular readings."[20] If there was a way to detect such read-

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something to be said for the appeal of a method that lets us count the data used to determine transcriptional *probability*.

18 Royse, *Scribal Habits*, 55, 63; the quote is taken from Westcott and Hort, *Introduction*, 24.

19 Westcott and Hort write that coincidental agreement is unlikely "except where an alteration is very plausible and tempting" (*Introduction*, 46). When considering all variants, however, I think this exception is far too limiting. Royse likewise says that such agreements are probably more common than frequently acknowledged (*Scribal Habits*, 42 n. 12).

20 Jongkind, *Scribal Habits*, 242. Elsewhere, Jongkind suggests that the CBGM may also underestimate the number of independent agreements (see his "Singular Readings in Sinaiticus: The Possible, the Impossible, and the Nature of Copying," in *Textual Variation: Theological and Social Tendencies? Papers from the Fifth Birmingham Colloquium on the Textual Criticism of the New Testament*., ed. David C. Parker and H.A.G. Houghton, Text and Studies Third Series 6 [Piscataway, NJ: Gorgias, 2008], 41 n. 14). But this judgment seems to be given without due consideration for the CBGM's ability to vary connectivity (on which see below).

ings, our study of scribal habits and the transcriptional probabilities based on them could be advanced beyond the study of singular readings.

1.3 *The CBGM as a Solution*

Since the CBGM was designed to address the problem of coincidental agreement,[21] the question naturally arises whether it might provide a better way of isolating scribally-created readings. One way the CBGM might be used for this is to study the global stemma to see where the text changes between each witness and its stemmatic ancestors. But another possibility has been offered by Holger Strutwolf who suggests that we should use the CBGM's textual flow diagrams.[22] Not only are these diagrams designed for detecting possible cases of coincidental agreement, but the data for assessing potential ancestors can be used to suggest the sources of such readings as well. Strutwolf's essay, however, offers only five examples and is intended only as a demonstration. As he concludes, "I presented only a few examples in this paper, but I believe that the method I used has great potential to help us clarify the rules of internal textual criticism by combining them with the overall picture of the textual history we gain by using the Coherence-Based Genealogical Method."[23] In what follows, we have a chance to test this with a much larger data set.

1.3.1 Precedent for the Method

As we saw in the previous chapter, the suggestion that overall manuscript agreement can help identify cases of coincidental agreement has been made before. In fact, Strutwolf's suggestion to use coherence to study the causes of textual agreement bears remarkable similarity to a method suggested by Royse

21 Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 141–142. As the editors of the ECM write, textual flow diagrams "can also signal multiple emergence of a variant;" ECM2, 34*.

22 Holger Strutwolf, "Scribal Practices and the Transmission of Biblical Texts: New Insights from the Coherence-Based Genealogical Method," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 139–160. Strutwolf's claim that singular readings "are of no relevance for the history of the text" since their manuscripts were either not copied or they were subsequently corrected (p. 147) not only ignores the fact that singular readings may be singular simply by virtue of lost manuscripts, but it is at odds with the CBGM itself which includes singular readings in its own data.

23 Strutwolf, "Scribal Practices," 159.

himself as a way beyond the "major difficulty" of coincidental agreement.[24] Following Colwell,[25] Royse suggests that where members of separate manuscript families agree with each other against the rest of their family members, we can safely assume that their agreement is coincidental rather than genetic. This is the same basic principle employed by the CBGM in the study of coherence. Where a witness has a reading not found in one of its close potential ancestors, this may indicate that the reading was created by the scribe rather than being copied from its source(s). To put this in Royse's terms, it means that where a witness disagrees with its potential ancestors in the same "family," we have reason to suspect that it was created by a scribe rather than the author. The advantage of the CBGM is that it gives us the ability to flex the boundaries of our "families" based on the nature of the reading in question. We may not, for example, want to treat an agreement in reading ἀμήν at the end of James with the same strictness that we treat an agreement in reading ὅτι αὐτῷ ἡ δόξα τοὺς αἰῶνας ἀμήν at the same point. This "strictness" is known as the "connectivity" of the reading because we are dealing with how likely a reading is to connect its witnesses genealogically.[26]

1.3.2 An Illustration of the Method

An example from James can illustrate the procedure. At Jas 2.23, witness 459 alone has φωνή instead of γραφή in the clause καὶ ἐπληρώθη ἡ γραφὴ ἡ λέγουσα κτλ. Quite naturally, the ECM editors judged φωνή to be derived from γραφή in this instance. The textual flow diagram reflects this relationship while also showing us the most likely source witness for 459 at this point (see Figure 25).

From among the ten most similar potential ancestors (i.e., a connectivity of ten), the CBGM selects the most similar potential ancestor of 459 as the source of this reading. Hence we see the connection 104 → 459 in the diagram. These two witnesses share a 97.4 percent agreement across the Catholic Epistles. The next most similar potential ancestor for 459 is 020 which has an agreement of only 93.3 percent. This makes 104 a good candidate for the source of 459 at this point.

This is a simple example but it illustrates an important difference between the CBGM and the singular readings method. In this case, both methods would register the change as a substitution. But the ability of the CBGM to connect

24 Royse, *Scribal Habits*, 2008, 741–742. For others who present the same principle, see the previous chapter.

25 Colwell, "Scribal Habits," 123 (items II and III).

26 Mink, "Contamination, Coherence, and Coincidence," 143. Cf. pp. 58–65 above.

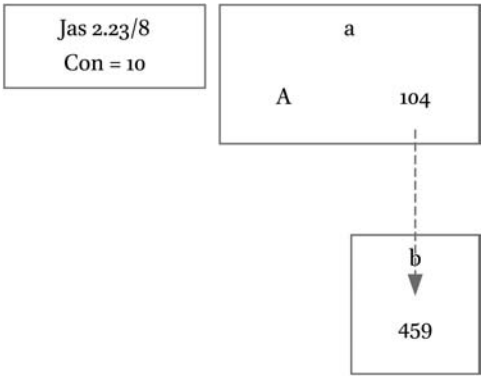

FIGURE 25 *The predominant textual flow diagram for Jas 2.23/8 with connectivity set to ten, the initial text set to the* a *reading (γραφή), all the Catholic Epistles set as the data source, and fragmentary witnesses excluded*

individual witnesses means that it can be applied to both singular and non-singular readings as well as in cases where there is more than one possible source for a singular reading. To illustrate, let us consider the next clause at Jas 2.23 where it is said that Abraham was credited with righteousness and "called a friend of God" (φίλος θεοῦ ἐκλήθη). Instead of "friend" (φίλος), a number of minuscules have Abraham called a "slave" (δοῦλος) of God possibly under the influence of the Old Testament (cf. Exod 32.13; Deut 9.27; 1 Chr 16.13). Setting the connectivity to ten and assuming that φίλος (reading *a*) is the initial text shows three cases of δοῦλος (reading *b*) developing from *a* and no cases of the reverse (Figure 26). If, on the other hand, we set reading *b* as the initial text, we find two cases of *b* developing from *a* and now one case of the reverse (Figure 27).

We may also want to flex the level of agreement required to connect witnesses. At its tightest (connectivity = one), the CBGM will only connect each witness with its *most similar* potential ancestor; at its loosest (connectivity = 499/absolute), the CBGM will connect each witness with *any* potential ancestor that shares the same reading at this point. In other words, the textual flow diagrams connect witnesses by agreement whenever possible within the connectivity limits set by the user. A tighter connectivity results in more instances of textual changes (Figure 28) whereas a looser connectivity produces very few (Figure 29).

For absolute connectivity, where any potential ancestor is selected, the result is usually one change for every variant from the initial text. Naturally, the diagrams can get more complicated as the number of readings increases such

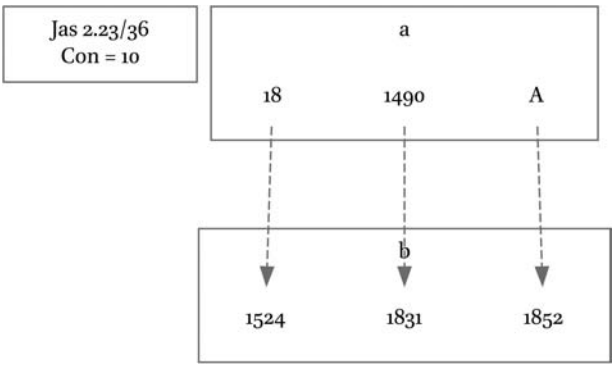

FIGURE 26 *The textual flow diagram for Jas 2.23/36 with reading* a (*φίλος*) *set as the initial text*

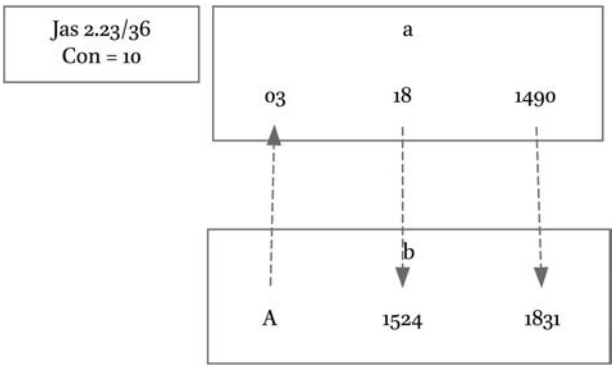

FIGURE 27 *The textual flow diagram for Jas 2.23/36 with reading* b (*δοῦλος*) *set as the initial text*

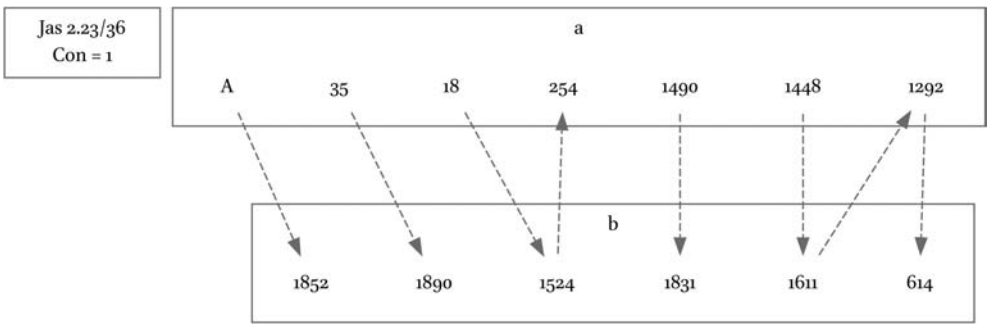

FIGURE 28 *Jas 2.23/36 with the tightest connectivity possible* (= *1*)

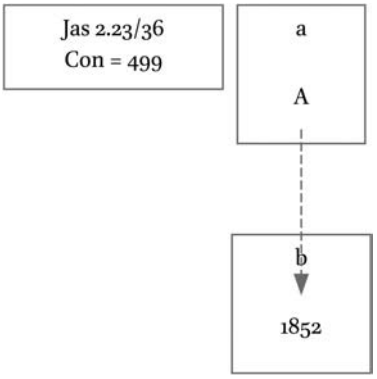

FIGURE 29
Jas 2.23/36 with the loosest connectivity possible (*absolute or 499*)

as Jas 5.10/2–16 which is the largest variation in James or when the tradition is closely split over a simple variation such as the addition or omission of a particle like ἄν in Jas 5.7/44.

An important feature of the CBGM that these examples illustrate is that it allows the user to adjust the settings based on the nature of the variation. This is by design.[27] On the other hand, this requires a judgment on the part of the user. Why should a any given variation be judged at a connectivity of ten rather than, say, twelve or twenty? There are no formulaic answers here and the user must make such decisions based not only on the nature of the variation itself, but also on the level of agreement among the witnesses that attest them. As with all textual criticism, judgment is required and it is best sharpened by experience.

Still, this need for such editorial judgment means sacrificing some of the "moral certainty" valued by Royse. We will return to this concern in our conclusion, but, for the present investigation, the decision was made to reduce the subjectivity by other means. We have recorded results for three separate connectivity levels, one at the highest, one at the lowest, and one in between. In this way, the results provide the complete range of possibilities. At the lowest connectivity, we will see the maximum number of instances of textual change and at the highest level, the minimum. Beyond this, the basic procedure is simple. All the textual flow diagrams available for James were checked with the data source set to the Catholic Epistles and fragmentary witnesses excluded.[28] James

27 Gerd Mink, "Editing and Genealogical Studies: The New Testament," *Literary and Linguistic Computing* 15, no. 1 (2000): 53.

28 The definition of a witness as "fragmentary" appears to vary depending on whether the data source is set to the Catholic Letters or an individual writing. For the former, a witness is fragmentary if it is "not extant in Jas, 1Pt, 2Pt, 1Jn and at least one of the smaller letters" (Mink, "Guide [2.0]," § 3b). For the latter, a witness is deemed a "minor

was chosen because it has the most witnesses in the CBGM. Each textual change in the textual flow diagrams was recorded as an addition, omission, substitution, or transposition. Changes that involve more than one of these categories were left out of the results for simplicity; their number was not great. Along with these data, all the singular readings in James (according to the ECM) were catalogued using the same categories. This second data set will provide our key point of comparison.

1.3.3 The Dataset in James

The above procedure found 664 places in James where the CBGM has textual flow diagrams. This is from a total of 916 places of variation printed in the ECM2.[29] There are a number of factors to keep in mind that account for these different numbers. First, a variation unit included in the ECM may be excluded from the CBGM if the only variant from the initial text is orthographic, if it is a correction (e.g., Jas 1.3/7), or if it is attested only by sources excluded from the CBGM (lectionaries, versions, and patristic sources). Likewise, there are some variation units that only have textual flow diagrams when fragmentary witnesses are included in the dataset. At Jas 1.12/20, for example, witness 1848 is alone in omitting τόν before στέφανον. Since 1848 only attests James and 1–2 Peter of the Catholic Epistles,[30] it is considered fragmentary and so not included in all CBGM datasets.

More important is the matter of how nonsense or "error" readings are handled. The ECM defines as an "error" any reading that the editors deem either logically or grammatically impossible.[31] As a category, such readings are included in the CBGM in differing ways depending on whether the editors could identify the error's "correct form."[32] Where they could identify this putative form, the

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fragment" if it "contains only 50% or less out of the total of variant passages of the relevant writing" according to Klaus Wachtel, "Genealogical Queries—Documentation," unpublished document (Münster: INTF, 2008), 3.

29 Mink reports 761 places of variation for James. This seems to be because he is not counting places where there is a single letter address (e.g., Jas 1.19/14). See Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 18–21; idem, "Contamination, Coherence, and Coincidence," 147 n. 15.

30 See ECM2:Supp, 6.

31 ECM2, 26*–27*.

32 Ibid., 27*. A certain cleavage emerges here between the ECM and the CBGM in that most error readings with their own letter address in the ECM are nevertheless related to another

CBGM treats it and its error the same.[33] At Jas 1.2/16, for example, 1509 reads περιπεσητω and 1611 reads περιπεση. These errors are recorded in the ECM but they are both assigned to the reading περιπέσητε which is found in all other witnesses. Thus, these two error readings will not be distinguished in the textual flow diagrams in the CBGM.

In other places, the editors were not able to assign a correct reading. In these cases, the error will be distinguished as a separate reading in the CBGM. At Jas 1.6/5, for example, 1751 inserts ἡμῶν resulting in αἰτείτο δὲ ἡμῶν ἐν πίστει and the editors could not identify its correct, intended form.[34] In this case, the CBGM treats the error as a distinct reading. Using the electronic dataset for the ECM of James, I found 587 readings marked as errors in the apparatus. Of these, at least 465 are those for which the editors have identified a "correct" form.[35] The implications of these different ways of treating errors will be discussed in chapter six. Here we simply note the difference as it reduces the number of scribally-created readings that otherwise could be studied using the CBGM.

2 Results

2.1 *Initial Results*

As noted, all 664 places where the CBGM has textual flow diagrams were examined using the three levels of connectivity. This produced a total of 1,992 diagrams. In each case, the diagram was checked and every textual change was recorded as either an omission, addition, transposition, or substitution. The first two categories have been subdivided into those involving a single word and those involving two or more words. The complete dataset can be studied in detail at http://doi.org/10.6084/m9.figshare.5245243. At this point, no attempt

reading in the CBGM's local stemmata. So, for example, the transposition of ἔργου in 018 at Jas 1.25/36 is given its own letter address and marked as an error in the ECM, but the local stemma records it as deriving from reading *a*.

33 For the rationale of this decisions, see Mink, "Problems," 26.

34 This illustrates the judgment necessary to identify "errors" as such; no attempt is made to adjudicate such decisions here.

35 The exact number is not easily determined from the database alone. The number is clearly less than 131 because this is the total number left when filtering out all the errors that occur with an *a* address. Since the *a* reading is always the editorial reading and since the editors never print an error, it follows that all errors with an *a* address have been joined to a correct reading.

TABLE 5 *The number of changes in the textual flow diagrams for James with the initial text set to a, the data source set to all of the Catholic Epistles, and excluding fragmentary witnesses. For variations on these settings, see below*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	899 (18.7%)	197 (4.1%)	882 (18.3%)	159 (3.3%)	352 (7.3%)	2,331 (48.4%)	4,822
10	405 (20.0%)	120 (5.9%)	340 (16.8%)	78 (3.9%)	156 (7.7%)	924 (45.7%)	2,023
499 (= abs.)	229 (20.2%)	83 (7.3%)	198 (17.4%)	46 (4.1%)	92 (8.1%)	487 (42.9%)	1,135

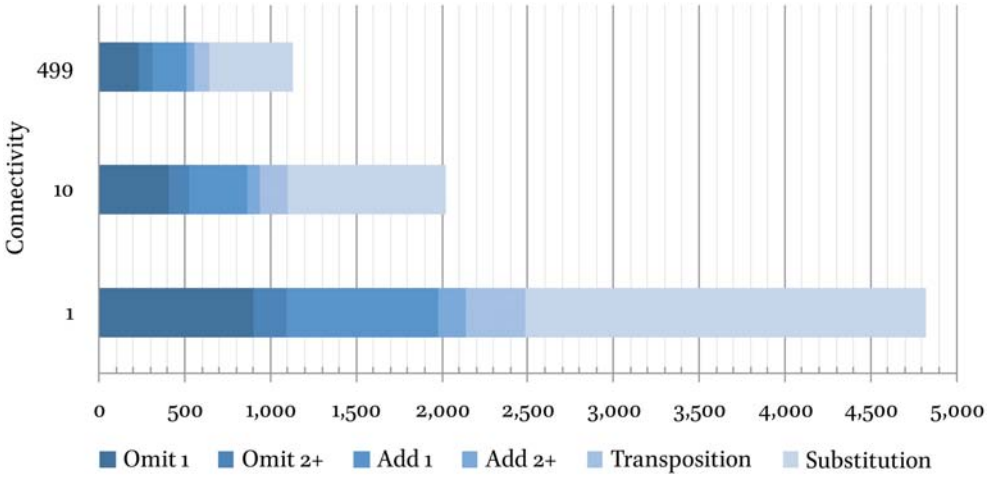

FIGURE 30 *Textual changes in James by connectivity*

has been made to record the cause of these changes. That valuable work would take us far from our present concerns and so must be left for another day. The results for James are given in Table 5.

The table should be read from left to right such that 899 (18.7 percent) of the 4,822 changes detected with a connectivity of one were cases where one word was omitted from the ancestor. Moving to the next column, 197 (4.1 percent) of the total changes detected involve the omission of two or more words, etc. To simplify, we can present the same data in chart form (Figure 30).

As this chart clearly shows, the largest category by a large margin is substitutions. These total over 40 percent of all changes regardless of the connectivity. Not surprisingly, single words make up the vast majority of omissions and additions. Transpositions are far less common, ranging from only 7.3 percent to 8.1

TABLE 6 *A comparison of our averaged results using the CBGM with the combined results of Royse using singular readings. Only Royse's "significant readings" are included*

Source	Omissions	Additions	Transposition	Substitution	TOTAL
CBGM (James)	644 (24.2%)	568 (21.4%)	200 (7.5%)	1,247 (46.9%)	2,659
Royse	312.5 (31.5%)	128.5 (13.0%)	122 (12.3%)	429 (43.2%)	992

percent of the total changes. Perhaps the most surprising result is how little the percentages vary between the highest and lowest connectivity setting. This is despite a difference of almost 3,700 total changes between the highest and lowest connectivity. The greatest change occurs in the categories of substitutions and omissions of two or more words. Substitutions decrease at the lowest connectivity by just over five percentage points compared to the highest whereas omissions increase by over three points. The other categories all remain within about one-and-a-half percentage points. These changes are in keeping with the nature of connectivity as a way to detect coincidental agreement. As the connectivity tightens, we get a higher percentage of substitutions and a lower percentage of omissions of two or more words. Both are accounted for if we consider that many substitutions are easy to make whereas omissions of two or more words are less so. This suggests that coherence and connectivity work as designed.

If we combine our two omission and addition categories and average our three connectivity levels, we can compare them directly with the "significant readings" found by Royse in his study of singular readings.[36] The results are presented in Table 6.

The most obvious difference here is the vast increase in data when using the CBGM. Even averaging our three datasets, we still have 2,659 changes just in James. In contrast, Royse's six papyri cover material from across the New Testament. Comparing the percentages, we find that substitutions and transpositions vary by about five percentage points. The biggest difference, and also the most significant, is that of additions and omissions. Whereas Royse found that omissions outnumbered additions more than 2.4:1, the data from the CBGM

36 The data for Royse are taken from *Scribal Habits*, 902. I removed Royse's smallest category ("conflations") because they were not counted in the present study. Their number in Royse's study, as here, is negligible.

has them nearly even with 1.1:1. This is even more surprising given that the total additions and omissions account for nearly the same percentage of the whole in both studies: 44.5 percent in Royse's study and 45.6 percent in our own. That the major difference with Royse should occur here is especially significant given the discussion about whether scribes added or omitted text more frequently and whether the latter was more common early on. These results would suggest that they did both with nearly the same frequency in James.

Royse's study, however, is not the best point of comparison since it contains no material from James and because of its exclusive focus on the papyri. A better comparison is provided by the singular readings in James as provided by the ECM. In this we are drawing from the same dataset in both methods. Using the electronic database behind the ECM apparatus, it is a simple matter to filter readings attested by a single witness. In total, this resulted in 1,134 singular readings. These include "error" readings and some orthographica although the latter constitutes a small category as the ECM excludes common vowel interchanges, doubling consonants or reducing doubled consonants, and movable σ and ν.[37] There are thirty-nine singular orthographic readings and 494 which are singular error readings.[38] Here, an error attested by a single witness is counted as a singular reading regardless of whether the ECM editors assigned it to a "correct" reading or not. It should also be noted that there are 287 singular readings that are not included in the CBGM because they are either corrections, additional ("z") readings, or error readings associated with a correct reading at a point where there is no other variant reading listed (e.g., Jas 1.1/14).

Determining the origin of the singular readings is straightforward. Since we are interested in comparing the results with those of the CBGM, it makes sense to allow the same editors to determine the source readings in both cases. Thus, the origin of each singular was determined in one of the following three ways: (1) wherever possible, the local stemmata were used to determine the source; (2) where error readings have been assigned to a "correct" reading in the ECM, this "correct" reading was used as the source; (3) where neither option is available, I used my own judgment. The results are presented in Table 7 alongside the averaged results from our initial test.

Several categories show little difference between the two methods. Transpositions and additions and omissions of two or more words are within one percentage point of each other. The largest difference by far is the rate of substitutions with a difference of more than ten points. The next largest difference is

37 ECM2, 26*–27*.

38 There are ten readings that are marked as orthographic and error readings.

TABLE 7 *The types of changes in singular readings in James compared to the averaged results from the CBGM*

Dataset (James)	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
Singular Readings	148 (13.1%)	68 (6.0%)	135 (11.9%)	45 (4.0%)	74 (6.5%)	664 (58.6%)	1,134
All Readings	511 (19.2%)	133 (5.0%)	473 (17.8%)	94 (3.5%)	200 (7.5%)	1,247 (46.9%)	2,658

between omissions and additions of a single word. In both cases, the CBGM results show around six percentage points more than singular readings. This is even more striking given that omissions and additions of two or more words change in the opposite direction. The percentage of such changes in the CBGM is less than that among singular readings. Perhaps the most interesting difference is between additions and omissions overall. In both datasets omissions outnumber additions just as they do in Royse's study, but here the difference is far less significant than Royse found in the papyri. The ratio is only 1.2:1 where Royse found more than 2.4:1.

What accounts for these differences between the two methods? Why, for example, do omissions of one word outnumber omissions of two or more words in singular readings at a rate of 2:1 whereas the rate is nearly 4:1 in the CBGM? I suspect that the reason is that omissions and additions of one word are precisely the kind that are most likely to occur coincidentally in the course of transmission. If we think of the most common types of single-word additions and omissions—articles and conjunctions—they are particularly easy for scribes to make independently. It is exactly those readings that we can expect scribes to have created multiple times and, as such, they are left out of a study of singular readings. One needs a way to detect multiple emergence in order to see them and the CBGM appears to do just that by harnessing the coherence of witnesses at particular points of variation. If this is accurate, then it follows that studying singular readings gives us a less accurate picture of how often such additions and omissions occur.

Several further observations can be made from these data. The first is that both the study of singular readings and the study of the CBGM's textual flow diagrams in James show that text was omitted slightly more frequently than it was added. The difference, however, is much narrower in James than what was found in Royse's study of the early papyri. This could be explained by less careful copying in the earliest centuries or it could be the result of his

smaller sample size. In any case, comparing our results from James, the CBGM clearly provides us with much more data than the study of singular readings. The major difference in terms of the resulting percentages is that substitutions are less frequent relative to other types of changes in the CBGM than in the singular readings. More significantly, omissions and additions of single words are much more common and appear to be underrepresented when only considering singular readings. On the other hand, additions and omissions of two or more words appear to be over-represented in the singular readings. This too is not surprising since such changes are the type that are less naturally made multiple times in the same way.

2.2 *Additional Tests*

The results from the previous section suggest that the CBGM's textual flow diagrams are valuable for studying textual changes. But in the preceding survey, only one of the CBGM's variables for drawing textual flow diagrams was changed, the one affecting connectivity. To better understand the effect the other variables have on the results, we need to run a series of additional tests to see whether any one might skew the results.

We have already tested the connectivity variable, but other variables include (1) whether fragmentary witnesses are included; (2) the data source used for the diagrams, whether all the Catholic Epistles or just James; (3) which reading is designated the initial text for each textual flow diagram; and (4) the textual composition of the initial text as a whole witness (i.e., the A witness in the diagrams). We can test each of these variables in turn, this time restricting ourselves to the 176 variant units in Jas 1.[39] Along with our original settings, this means at least four additional tests need to be conducted. Given the number of variables, the total number of tests that could be conducted from these settings is sixteen. But as the results will make clear, these additional tests are not necessary. The variables for the five additional tests are listed in Table 8.

The final test was done using our own version of the CBGM mentioned in the previous chapter. It will be recalled that in this set up, the A witness was changed throughout the Catholic Epistles to match the Byzantine text.[40] The

39 The number changes slightly between tests since some variant units exists only with certain settings (e.g., fragments).

40 Here defined by Maurice A. Robinson and William G. Pierpont, *The New Testament in the Original Greek: Byzantine Textform* (Southborough, MA: Chilton, 2005). It should be noted that their Byzantine text does not always match the ECM's (e.g., Jas 2.11/8–18; 1Pet 3.5/21).

TABLE 8 *A comparison of settings for the initial test and the four additional tests*

Test	Frag. witnesses	Data source	Initial text	Text of a witness	Results
1	Excluded	Catholic Epistles	a	ECM2 Text	Table 9
2	Included	Catholic Epistles	a	ECM2 Text	Table 10
3	Included	James	a	ECM2 Text	Table 11
4	Excluded	Catholic Epistles	b	ECM2 Text	Table 12
5	Excluded	Catholic Epistles	a	Byzantine Text	Table 13

Byzantine text was chosen, in part, because many continue to conceive of this text as something of a polar opposite to the reconstructed ECM/NA text. This makes it a valuable testing ground to compare with the ECM. It needs to be pointed out that changing the A witness affects every other witness's relationship to it. Witnesses that formerly did not have A as their closest potential ancestor may now do so and vice versa. As shown in the previous chapter, the immediate descendants of the initial text are different in this version of the CBGM because the initial text as a hypothetical witness is now the Byzantine text.

Before comparing the results, we need to comment on the important issue of overlapping variant units. In tests where the initial text is set to *a*, overlapping variant units present no problem. This is because such overlaps only occur in the ECM where there is a large omission of the initial text. Where this happens the ECM does not re-list the witnesses attesting the omission in the sub-units. This is the same in the CBGM as well. When witness 2186 omits καὶ ἡ εὐπρέπεια τοῦ προσώπου αὐτοῦ ἀπώλετο οὕτως by parablepsis in Jas 1.11, for example, the omission is given its own variation unit. Within this larger unit there are, however, other minor variations. Witnesses 1890 and 2138, for example, omit only the first καί and this single omission is given a separate variant unit. The larger unit is thus designated as Jas 1.11/34–48 and the smaller as Jas 1.11/34.

In such a case, it would be wrong to count witness 2186 as guilty of *two* omissions, one for each variant unit. Fortunately, the ECM has addressed this situation by not re-listing witness 2186 with a separate letter address for Jas 1.11/34. Instead, it is listed with an up arrow (↑) signaling that its reading in

In test five, in places in Jas 1 where the Byzantine text differs from the *a* reading of the ECM, the textual flow diagrams were changed accordingly (cf. reading *b* at Jas 1.5/30).

the smaller unit is affected by its reading in the preceding, overlapping unit. This means that witness 2186 will not be displayed in the textual flow diagram for Jas 1.11/34. The reason is that these diagrams only show readings with distinct letter addresses in the ECM. In short, the overlap in variation units will not affect the results of all but one of our tests because, in them, the *a* reading is set as the initial text.

Where these overlapping unites do become a problem is in test four where we set the initial text to reading *b*. Returning to the omission of 2186 in Jas 1.11, the problem lies in the fact that, by setting *b* as the initial text at the larger unit (1.11/34–48), we have designated a large, *singular* omission as the initial text.[41] That means that all the witnesses that have the initial text as their closest potential ancestor will now be connected to the large omission found in 2186 at this point. If we count the data from both the larger unit (Jas 1.11/34–48) and the subunit (Jas 1.11/34), then we are guilty of counting twice what should only be counted once. In other words, it is meaningless at Jas 1.11 to count Sinaiticus (01) as adding the whole phrase καὶ ἡ εὐπρέπεια τοῦ προσώπου αὐτοῦ ἀπώλετο οὕτως in the unit designated as Jas 1.11/34–48 and then to also count 01 as adding the first καί of this same clause in the unit designed as Jas 1.11/34. The scribe of 01 may have done one or the other but not both. Therein lies the problem for our fourth test.

The simplest way to avoid this methodological problem is to leave out variant units that contain smaller units within them. Thankfully the number of such variant units is minimal. There are only nine in Jas 1 that would affect the results.[42]

With these caveats out of the way, we are ready to consider the results from our additional tests to see what affect these variables have in the construction of the CBGM's textual flow diagrams and, hence, in what they may tell us about scribal tendencies.

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41 It should be remembered that changing the initial text at one, isolated variation unit is not the same as changing the initial text as a whole witness across the entire Catholic Epistles. This difference is what distinguishes test four from test five.

42 They are found at Jas 1.7/2–24; 1.9/6–20; 1.10/2–14; 1.11/32–44; 1.11/34–48; 1.13/28–34; 1.15/10–20; 1.18/8–18; 1.27/40–50 (the overlapping units at Jas 1.11/48–64 and 1.24/10–14 are not included in the CBGM). Excluding these nine units has the effect of decreasing the number of cases of "add 2+" since most of these units involve large omissions in the *b* reading.

TABLE 9 *The results from test one for Jas 1*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	167 (19.3%)	75 (8.7%)	107 (12.4%)	35 (4.1%)	45 (5.2%)	435 (50.3%)	864
10	96 (22.3%)	39 (9.0%)	61 (14.2%)	15 (3.5%)	25 (5.8%)	195 (45.2%)	431
499 (= abs.)	55 (22.3%)	21 (8.5%)	37 (15.0%)	13 (5.3%)	15 (6.1%)	106 (42.9%)	247

TABLE 10 *The results from test two for Jas 1*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	173 (17.3%)	55 (5.5%)	138 (13.9%)	44 (4.4%)	62 (6.2%)	525 (52.7%)	996
10	111 (22.0%)	43 (8.5%)	71 (14.1%)	19 (3.8%)	30 (5.9%)	231 (45.7%)	505
499 (= abs.)	60 (21.0%)	24 (8.4%)	40 (14.0%)	18 (6.3%)	19 (6.6%)	125 (43.7%)	286

TABLE 11 *The results from test three for Jas 1*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	191 (19.9%)	53 (5.5%)	130 (13.5%)	27 (2.8%)	60 (6.3%)	499 (52.0%)	960
10	122 (23.7%)	43 (8.3%)	72 (14.0%)	13 (2.5%)	30 (5.8%)	235 (45.6%)	515
499 (= abs.)	59 (21.1%)	24 (8.6%)	37 (13.3%)	15 (5.4%)	20 (7.2%)	124 (44.4%)	279

TABLE 12 *The results from test four for Jas 1*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	493 (17.2%)	143 (5.0%)	576 (20.1%)	191 (6.7%)	173 (6.0%)	1,295 (45.1%)	2,971
10	96 (19.4%)	38 (7.7%)	83 (16.8%)	25 (5.1%)	33 (6.7%)	220 (44.4%)	495
499 (= abs.)	43 (16.5%)	16 (6.2%)	59 (22.7%)	18 (6.9%)	19 (7.3%)	105 (40.4%)	260

TABLE 13 *The results from test five for Jas 1*

Connectivity	Omit 1 word	Omit 2+ words	Add 1 word	Add 2+ words	Trans-position	Substitution	TOTAL
1	155 (18.2%)	60 (7.0%)	113 (13.3%)	28 (3.3%)	45 (5.3%)	451 (52.9%)	852
10	95 (22.2%)	35 (8.2%)	55 (12.9%)	20 (4.7%)	28 (6.5%)	195 (45.6%)	428
499 (= abs.)	50 (21.4%)	20 (8.5%)	33 (14.1%)	12 (5.1%)	19 (8.1%)	100 (42.7%)	234

TABLE 14 *Comparison of results from the tests in Jas 1*

Test Number	Omissions	Additions	Transposition	Substitution	TOTAL
1	151 (29.4%)	89 (17.3%)	28 (5.5%)	245 (47.8%)	513
2	155 (26.0%)	110 (18.4%)	37 (6.2%)	294 (49.3%)	597
3	164 (28.0%)	98 (16.8%)	37 (6.3%)	286 (48.9%)	585
4	276 (22.8%)	317 (26.2%)	75 (6.2%)	540 (44.7%)	1,208
5	138 (27.3%)	87 (17.2%)	31 (6.1%)	249 (49.3%)	505

For the sake of comparison, we can average the results in each of our four tests as before, again combining all additions and omissions for simplicity's sake. The results are shown in Table 14.

What is immediately obvious from this comparison is that the most significant variable by far is whether reading *a* or *b* is set as the initial text for each diagram (test four). Where the initial text is set to *b*, additions outnumber omissions for the first time. The reason for this is not hard to find and it is hinted at in the large increase in the total number of textual changes overall in test four (more than double the other tests). This is due to the important role that the A witness plays in the construction of the textual flow diagram as was seen in the last chapter. In total, there are fourteen witnesses in the CBGM that have A as their closest potential ancestor.[43] Since the A witness is constituted by *a* readings, changing the reading of A in any specific textual flow diagram means

43 The number is listed as 18 in ECM2, 33*. But this list reflects the data from the ECM1 not the ECM2. The online tools, however, work with the data of ECM2. The four witnesses that have dropped off the list are 2492, 1735, 2344, and 442. My thanks to Dirk Jongkind for first bringing this to my attention.

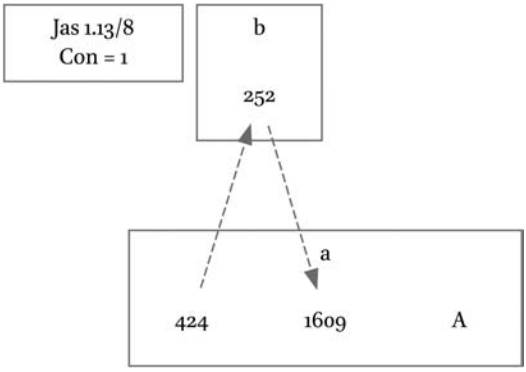

FIGURE 31 *The predominant textual flow diagram for Jas 1.13/8 with connectivity set to one and the data source set to the Catholic Epistles, excluding fragments*

that all fourteen of these witnesses likely now have a different reading from A.[44] This is not normally the case. An example will illustrate the point.

At Jas 1.13/8, the main text of witness 252 has omitted ὅτι. The textual flow diagram for this variant in our first test, with the initial text set to *a* is straightforward (see Figure 31). The diagram shows 252 omitting the text from 424 and the text is then added again by 1609. Thus we would count one case of "add one" and one case of "omit one."

But if we tell the computer to construct the same diagram with reading *b* set as the initial text, we get a very different result (see Figure 32). We still have the omission from 424 to 252 and the addition from 252 to 1609. But now our fourteen witnesses with A as their closest potential ancestor all descend from a witness (A) that has a different reading than them. Thus there are fourteen additional changes where before there were only two.

There are numerous cases like this in test four because the majority of variant passages in Jas 1 are cases where the *b* reading is so poorly attested that the textual flow is guaranteed to have poor coherence when *b* is set as the initial text. To recall an observation from the last chapter, the presence and definition of the A witness can have a significant influence on the overall coherence of textual flow diagrams. Since most of the *a* readings are well-attested, setting the initial text to *a* for the textual flow diagram results in good coherence with few disruptions in the text flow. Thus the radical results from test four have a ready explanation, but one that significantly diminishes their value overall.

44 It must be remembered that here we are only changing the A text *at this one point of variation*. Only in test five have we changed the composition of the A text *as a whole*.

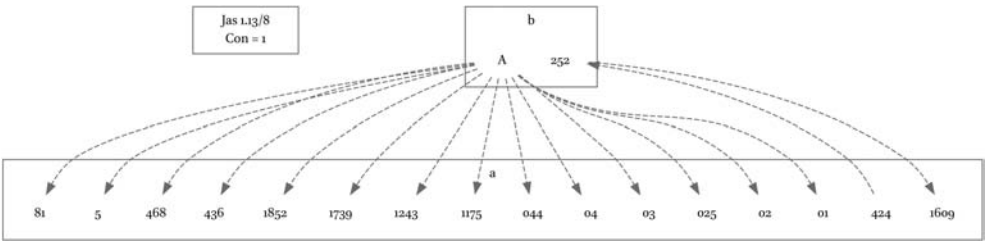

FIGURE 32 *The same textual flow as shown in Figure 31 but now with the initial text* (A) *set to reading* b

The other tests are all surprisingly even; none is an outlier. This is true even where the initial text was changed in all places to match the Byzantine text (test five). We might well expect that our change to the Byzantine text would have a more marked effect. But, in fact, the numbers shift only slightly. Omissions decline by two percentage points from test one but they still outnumber additions by over ten percentage points. The other categories in test five show even less difference from the first three tests. Again, the reason for this is not hard to find. Despite the fact that the Byzantine text is often thought of as the polar opposite of the NA text, the two are actually in substantial agreement. The fact that we only had to change 9 percent (283 of 3,043) of the local stemmata in the Catholic Epistles makes the point.[45] The ECM's initial text and the Byzantine text agree in roughly 90 percent of all variation units.

A final point about this last test is that it suggests that the CBGM's genealogical coherence as displayed in textual flow diagrams is not significantly affected by a change in 10 percent of all local stemmata. If it were, we should expect to see a shift in test five. As it is, their number is noticeably unaffected. I suspect this is due to the fact that pre-genealogical coherence, unaffected as it is by the editors' decisions in the local stemmata, plays a large role in genealogical coherence as reflected in the textual flow diagrams. We will reflect on the significance of this point below. In any case, with the exception of test four, our additional tests show that the variables have little effect on the results of our use of the textual flow diagrams and that our original study of James cannot be discounted because of the specific variables chosen.

45 The ECM2 supplement gives the number of Byzantine disagreements with the initial text as 206 in the Catholic Epistles; see ECM2:Supp, 10, 13, 15, 17. The disparity is due partly to the fact that there are more than forty places where the initial text is undefined by the ECM (and hence cannot differ from the Byzantine text) and partly to the fact that the Byzantine text here adopted is that of Robinson-Pierpont not that the ECM itself.

3 Methodological Reflections

3.1 *The Value of the CBGM for Studying Scribal Tendencies*

The preceding testing means that we can affirm with Strutwolf that the CBGM is a promising way to study scribal habits. The overall picture of scribal activity that emerges from our study in James remains largely unchanged regardless of connectivity. Where this setting did affect the results, it did so where expected. Tightening the connectivity resulted in an increased percentage of substitutions and a slight increase in the percentage of additions of one word. In both cases, these are errors we would expect scribes to create multiple times independently in the course of transmission. They are errors like the addition of articles and conjunctions or substitutions of one verb form for another.

One final point should be made about the CBGM. As will be emphasized below, the CBGM's genealogies are hypotheses and they are hypotheses based partly on the editors' own judgments about how readings relate to one another. I say "partly" because a major factor in the CBGM's genealogies is the overall agreement between witnesses. In order to be a potential ancestor, a witness need only have more prior readings. But to be an ancestor *in a textual flow diagram*, a witness must also be *more* similar than any other available potential ancestors. This similarity is difficult to charge with being biased in any significant way.

The combination of editorial and non-editorial factors is one reason why assessing the CBGM can be so difficult. It can be hard to know how much either one of them is affecting any given result. To put the problem in the context of scribal tendencies, using the CBGM forces us to ask whether we are studying ancient scribal tendencies or modern editorial ones. Crucially, the results of our additional tests in Jas 1 suggest that within the confines of our four categories of textual change, the editors' judgments in the CBGM have less influence than expected. The levels of agreements between witnesses (pre-genealogical coherence), which do not change from test to test, have a strong influence on the construction of textual flow diagrams. In other words, the less subjective factor has the greater influence.

3.2 *The CBGM and Singular Readings*

This brings us to the benefits of the CBGM vis-à-vis the study of singular readings for understanding scribal tendencies. I would suggest that both methods have benefits and drawbacks. The benefit of studying singular readings, as Royse noted, is that it promises to give us few false positives. We can have good confidence that singular readings are the creation of the scribes rather than the

authors of the New Testament.[46] In this, singular readings give us more secure data. The CBGM, on the other hand, provides us with a far larger dataset. The use of textual flow diagrams allows us to study what the singular readings method does not: scribally-created readings that exist in more than one manuscript.

The drawback of the CBGM is that it comes with slightly greater subjectivity. The CBGM's genealogies *are* hypotheses. This is important to stress because clean diagrams and decimal-laden percentages can lull the CBGM user into confusing precision with accuracy. Strutwolf, in fact, makes this mistake. In criticizing the singular readings method, he rightly says that "in most cases we do not know the real ancestors of the manuscript in question."[47] But just a few pages later, in presenting the CBGM as the solution, he claims that "as we now know the textual character of the ancestors the scribe was probably copying, we can reconstruct the scribal habits much better than was possible before."[48] The obvious problem is that we do not *know* this now any more than we did before the arrival of the CBGM. As Mink has often stressed, the results of the CBGM remain hypotheses, ones that face the same problem of missing data that threatens all historical investigation. The CBGM does not give us access to manuscripts we never had before. It deals with a selection of witnesses, not only of the tradition as it now exists, but even more importantly, of the tradition as it once existed. In Mink's own words: "We cannot find out the exact ways of transmission ('how it really was')" and the stemmatic ancestors produced by the CBGM "must not be confused with the historical exemplars of the descendant which are normally lost."[49] Unfortunatley, this is exactly the language Strutwolf has used, perhaps unguardedly, when speaking of the CBGM.[50] This should be avoided insofar as the CBGM gives us a hypothesis which, like all our knowledge of the past, remains selective. This is not a limitation of the CBGM per se, but rather a limitation of all stemmatic methods. As Barbara Bordalejo has written, "The historical reality that underlies our [genealogical] hypotheses cannot be recovered in its totality, whether this reality corresponds with the textual tradition or

46 We note that this does not resolve the question of attributing them to a particular scribe of a particular manuscript.

47 Strutwolf, "Scribal Practices," 142.

48 Ibid., 147–148.

49 Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (Münster: INTF, 2009), 37, 134; online at http://www.uni-muenster.de/INTF/cbgm_presentation/download.html.

50 Strutwolf, after offering one explanation for the variation in Jas 2.13/8, turns to the textual flow diagrams by saying "now let us see what really happened" ("Scribal Practices," 150).

with the manuscript tradition."[51] This applies no less to our use of the CBGM to study scribal tendencies. It is not a problem unique to the CBGM, but it should cause us to hedge our claims about its results.[52]

The study of singular readings gives us greater certainty in distinguishing scribal readings from those of the author than does the CBGM since the latter is based partly on our own decisions about this very matter. Still, we have seen that the subjective element affects the overall results less than expected. Where the CBGM outpaces the study of singular readings is in the help it offers in discerning coincidental agreement. Because of this, it allows us to consider far more of the textual tradition.[53]

Finally, the study of scribal tendencies, at least in Royse, has been motivated by a desire to achieve "moral certainty" in distinguishing error from non-error. But this concern has led to an unfortunate neglect of important data. At this point we do well to recall that when Westcott and Hort spoke about the "moral certainty" of readings introduced by scribes, it was not in the context of singular readings at all but rather in the context of transcriptional probabilities—two sections separated by more than 200 pages in their introduction. More importantly, the "certainty" with which they were concerned was *not* contrasted

51 Barbara Bordalejo, "The Genealogy of Texts: Manuscript Traditions and Textual Traditions," *Digital Scholarship in the Humanities* 31.3 (2016): 575. Martin West likewise says that a traditional *stemma codicum* is liable "to be an oversimplification of the historical reality" (*Textual Criticism and Editorial Technique Applicable to Greek and Latin Texts* [Stuttgart: Teubner, 1973], 35). To quote an earlier essay of Mink: "Eines leistet die Methode nicht: Sie gibt keine Auskunft über die tatsächliche Filiation der Handschriften und auch nicht der Textzustände. Aber auch keine andere Methode kann hier den historischen Befund ersetzen, der leider fast nie zu erreichen sein wird" (Gerd Mink, "Eine umfassende Genealogie der neutestamentlichen Überlieferung," *NTS* 39, no. 4 [1993]: 493). The statement that it gives "no information" (*keine Auskunft*) must be read as an overstatement, but the basic point about the method's limitation is clear enough.

52 Peter Robinson's warning applies to the CBGM no less than phylogenetic methods: "There is a danger that textual scholars may, on the one hand, look at phylogenetic reconstructions, think they represent an actual objective truth, and erect dangerous arguments on them." He also warns that there is a danger in the opposite direction, of dismissing such methods when they are shown not to deliver such objectivity. See his "Four Rules for the Application of Phylogenetics in the Analysis of Textual Traditions," *Digital Scholarship in the Humanities* 31, no. 3 (2016): 649.

53 Here we should remember that two of our main categories in this study are not affected in any way by human judgment. Variation units that involve only substitutions or only transpositions remain the same in our count regardless of how the editors make their decision about which reading is the origin of which. Cf. Royse, *Scribal Habits*, 92–93.

with human judgment as such, but rather with the judgment of "elementary guesses."[54] Thus, their contrast is between good and bad human judgment not between judgment and its absence. In fact, Westcott and Hort were quite confident in our ability to make such judgments about scribal habits. As they explain in the same context, "There is always an abundance of variations in which no practised scholar can possibly doubt which is the original reading, and which must therefore be derivative."[55] In short, Westcott and Hort did not share with Royse the belief that singular readings provide "the best evidence for the scribe's tendencies."[56] For them, the best evidence is far broader. We suggest that the way forward in discussions of transcriptional probability lies in a return to precisely those places where "practiced" scholars can do little but agree on the initial reading. Insofar as the CBGM's data are based on such cases, it provides one such way.

4 Conclusion

The study of scribal habits is an important part of determining what Westcott and Hort called transcriptional probability. Such probabilities aid the critic when the evidence is otherwise inconclusive. The study of singular readings has been one recent way of obtaining such probabilities. But this method, though used often, is significantly limited in scope by its very nature. This chapter has outlined and tested a way forward, one that is not unlike a method suggested by Royse himself. The use of the CBGM offers the possibility of detecting readings that have emerged multiple times in the extant tradition and are thus scribally created. In our study of James, we found that regardless of how much textual change is assumed to have taken place (using connectivity), the most common textual change is substitution and the lowest is transposition. With regard to omissions and additions we found that omissions outnumber additions. This is in keeping with previous studies. But in our study of James—both with the CBGM and with singular readings—the ratio of omissions to

54 Westcott and Hort, *Introduction*, 24. In 1859, Hort used what is clearly the converse of this phrase in a critique of F.H.A. Scrivener, writing that "every document can be tried by a reference to the numerous passages in which the abundance of early testimony leaves no *moral doubt* as to the [original] reading and yet the numerical preponderance of MSS. favours what is clearly the wrong side" (emphasis added). See F.J.A. Hort, "Reviews," *The Journal of Classical and Sacred Philology* 4 (1859): 380.

55 Westcott and Hort, *Introduction*, 23.

56 Hernández et al., "Papers from the 2008 SBL Panel Review Session," 21.

additions is far smaller than in previous studies. Were we to formulate any guiding principle from these results it would have to be that scribes added text almost as often as they omitted it—obviously, a rather unhelpful guide. Perhaps it is time to forgo a rule expressed merely in terms of variant length. In any case, future studies which refine the use of the CBGM for clarifying transcriptional probabilities should be encouraged.

PART 3

CHAPTER 5

A Historical Test: The Harklean Group in the CBGM

The two preceding chapters focused on reconstructing the initial text. This chapter and the next consider the CBGM's role for understanding the text's historical development. As we saw especially in chapter one, the relationship of the CBGM's genealogies to the text's historical development has not always been clear. This is true both with the editors of the ECM and with others as well. The editors frequently use the imprecise term "textual structures" to speak of the relationships the CBGM detects while, at other times, they have used language that suggests overly precise historical relationships. Hanging over the question of the CBGM's relation to history is the disjunction between text and manuscript that lies at its foundation. It is one thing to relate dateable manuscripts to each other; it is quite another to try to relate immaterial texts.

Into this confusion and lack of clarity, the goal in this chapter is to tease out whether and how the CBGM can be used for studying textual history. To do that, we first consider several criticisms that have been lodged against the method on this point before proceeding to a specific case involving two well-studied, dateable, and relatable texts: those represented by the Harklean and Byzantine manuscripts. This particular case shows that the CBGM can be useful for studying historical relationships. Even more importantly, it shows *how* the CBGM should (and should not) be used for this purpose.

1 The CBGM and Historical Reconstruction

Once again, the importance of the issue confronting us is expressed with typical clarity by Westcott and Hort who write that 'ALL TRUSTWORTHY RESTORATION OF CORRUPTED TEXTS IS FOUNDED ON THE STUDY OF THEIR HISTORY, that is, of the relations of descent or affinity which connect the several documents'.[1] One would be hard-pressed to find a text critic of any textual tradition who would disagree with this basic principle. Certainly, Gerd Mink would not. That the CBGM aims to help in this regard is clear; exactly how, is not. From his 2008 presentation, Mink explains that his general objective is to "improve

1 B.F. Westcott and F.J.A. Hort, *The New Testament in the Original Greek: Introduction, Appendix*, 2nd ed. (London: Macmillan, 1896), 40.

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understanding of textual history in light of all available information" and that the specific objective of the CBGM in this regard is to "to establish a comprehensive hypothesis for the genealogical structure of the textual tradition."[2] But what exactly is this "genealogical structure"? It is not clear.[3] Writing in response to Dirk Jongkind's questions on the issue of history, Mink says that "the CBGM gives no immediate historical answers. Yet, the text historian (well acquainted with the rules and limitations of the method) should ask why the CBGM reveals a certain structure and what the historical scenario behind [it] may be."[4]

More recently Klaus Wachtel has written directly about the CBGM's relationship to textual history. He claims that the global stemma, once completed, will offer "a hypothesis about the relative chronology of the development of the text as preserved in the manuscripts."[5] He explains that this relative chronology "can and will be put into relation with known historical data like the dates of the manuscripts carrying the textual witnesses, the dates of authors citing from the respective writings, and the dates of translations."[6] Unfortunately, there is no information yet from either Mink or Wachtel on exactly how this move from the CBGM's global stemma (or any of its other genealogies) to "known historical data" can or should be done. Given this lack of detail on what would seem to be a crucial step in the process of using the CBGM to "improve understanding of textual history," it is not surprising that the CBGM has been criticized repeatedly on exactly this point. Before turning to our test case, these criticisms need to be addressed.

1.1 *Is the CBGM Interested in History?*

To begin, we need to consider the matter of history itself: what makes a hypothesis historical in the first place? This question arises acutely in the writing of Yii-Jan Lin and Stephen Carlson on the CBGM. For both authors, the CBGM is

2 Gerd Mink, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (Münster: INTF, 2009), 10, http://www.uni-muenster.de/INTF/cbgm_presentation/download.html.

3 As Jongkind says, "The thing that remains unclear from statements on the objective of the CBGM is the nature of the structures within the developments of texts. What does such a structure mean?" Dirk Jongkind, "On the Nature and Limitations of the Coherence Based Genealogical Method" (paper presented at the SBL Annual Meeting, San Diego, November 22, 2014), 5.

4 Gerd Mink, "Some Notes on Dirk Jongkind's Paper 'Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks'" (paper presented at INTF colloquium, Münster, January 27, 2014), 11–12.

5 Klaus Wachtel, "The Coherence Method and History," *TC* 20 (2015): 6.

6 Ibid.

judged to be either uninterested or unsuited to addressing historical questions. This is somewhat surprising given that one of its explicit aims, as we have just seen, is to improve our understanding of textual history. How, then, can these authors conclude that it is uninterested in such history? The answer has much to do with their conception of what constitutes textual history. For both Lin and Carlson, what counts as history is particularly the motives and beliefs of scribes visible through the varying texts in our extant manuscripts.

1.1.1 Lin

For Lin, in particular, her concern for "a scribe's theological, social, or political motivations"[7] is what leads to the claim that the CBGM was designed with no interest in history. For her, the "the CBGM does not attempt to sketch any history, but focuses only on the mapping of textual relatedness."[8] In this, the CBGM is paired with phylogenetic methods which are said to "make no claim regarding the historical accuracy of their stemmata" and are both said to avoid "any historical narrative to explain their results, or, indeed, to have any part of the construction of their stemmata."[9] But the claim is inaccurate about both phylogenetics and the CBGM.[10]

In the first case, Lin is right to cite Mink in saying that "we cannot find out the exact ways of transmission ('how it really was'),"[11] but as he goes on to say in her own citation of him at this point, this situation is not due to a disinterest in history, but to the fact that there are so many missing links in our extant evidence. As Mink explains, it is a "stemma of manuscripts" that cannot be constructed since too many manuscripts are lost to us. Naturally, none of this means that the CBGM makes *no* claim about the accuracy of its stemmata. Yes, they remain hypotheses, but they are not less relevant for history for that reason. In the second case, it becomes clear over the course of Lin's discussion that her view of the CBGM is colored by her own view of what counts as a "historical narrative." For her, the CBGM's principles of parsimony exclude questions of theological or social motivation resulting in a "a rather

7 Yii-Jan Lin, *The Erotic Life of Manuscripts: New Testament Textual Criticism and the Biological Sciences* (Oxford: Oxford University Press, 2016), 134. Such concerns occupy so-called "narrative textual criticism" for which Lin advocates and which she sets in contrast to the CBGM (134–138, 154–155).

8 Ibid., 11.

9 Ibid., 133, 134.

10 Interestingly, it is precisely Carlson's interest in scribal motivations that led him to prefer a phylogenetic method over against the CBGM (see below).

11 Mink, "Introductory Presentation," 35; cited in Lin, *Erotic Life*, 133.

clinical perspective of the history of textual transmission."[12] It is true that Mink and Wachtel conclude that theological motives played only a minor role in the story of the text's transmission.[13] But to suggest that such a view is less historical because some find it boring is to confuse matters. An explanation is not historical simply because it is interesting. As it is, Lin's understanding of what constitutes a narrative of the text's transmission risks begging the question; it is certainly no reason to conclude that the CBGM is uninterested in history.

1.1.2 Carlson

Carlson shares an interest in the extent to which "theological concerns shaped the text over time" and, like Lin, concludes that "despite the term 'genealogical' in the name, the CBGM is not really intended to answer such questions about the history of the text."[14] For Carlson, it is not the principles of parsimony or the editors' skepticism about scribal motives, but rather the method's "fundamental decision to work from the relationships between states of text instead of between manuscripts and consequently to reconstruct only one hypothetical text, the initial text."[15] The result is that "those interested in the history of the text will have to look elsewhere."[16]

Carlson is right to point out that the CBGM's lack of reconstructed witnesses (excepting the initial text), means that it may require additional work for answering some types of historical questions. But it is hard to see how this lack of detail by itself makes the results unhistorical. As we have already seen with Lin, the reason Mink has hedged his historical claims for the method has less to do with the nature of the method and more to do with the nature of the tradition as we know it: he assumes that we have simply lost too many manuscripts for any high level of detail. Thus, our stemmata for the New Testament, no matter how they are constructed, will always be a simplification of history "as it was." This applies no less to Carlson's own results from Galatians, a point he sometimes forgets.[17] Whether this simplification is a problem for

12 Lin, *Erotic Life*, 137. It is not clear that Lin has understood that parsimony is not a way to avoid explaining (or narrating) the past but rather a way to choose between multiple ways of explaining the same data about the past (cf. ibid., 133–137).

13 Ibid., 135; cf. 176–177.

14 "Comments on the Coherence-Based Genealogical Method," *TC* 20 (2015): 1, http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-Carlson.pdf.

15 Ibid.

16 Ibid., 2.

17 See the conflicting descriptions of his own phylogenetic stemma in Stephen C. Carlson,

the CBGM will be explored in what follows, but neither the CBGM's lack of a "narrative" about scribal motives nor its decision to forgo the reconstruction of lost witnesses means that it uninterested in historical questions. Nevertheless, there are more potent problems for the CBGM. One in particular provides a valuable case study for investigating how the CBGM can contribute to our historical knowledge.

1.2 *The Problem of Soft Data and Reversed Relationships*

The most important questions about the CBGM's relationship to history have been raised by Dirk Jongkind in a series of unpublished presentations.[18] For Jongkind, there are two main problems for the CBGM's attempt to provide an "adequate hypothesis of the overall development of the text."[19] The first is a more general problem that the data behind the method are too unstable for producing genealogies. The second is a much more serious problem and involves relationships that break the method's assumptions and leave it vulnerable to the problems of contamination. These stem from what Jongkind calls the CBGM's use of a "false proxy" for determining genealogy. We will consider each objection in turn.

1.2.1 Soft Data

The problem Jongkind sees for the CBGM is that the numbers are not as objective as claimed and therefore cannot always be trusted. In particular, Jongkind calls attention to the data behind pre-genealogical coherence, data which has been said to be objective or even objectively established.[20] Now, he is obvi-

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The Text of Galatians and Its History, WUNT II 385 (Tübingen: Mohr Siebeck, 2015), 73–74, 243, 250. Carlson's criticism of the CBGM for relating texts rather than manuscripts is also a problem for him in that his own stemma of Galatians includes such entities as "Marcion" and "the Vulgate."

18 Dirk Jongkind, "Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks" (paper presented at INTF colloquium, Münster, January 27, 2014), 1–14; idem, "Nature and Limitations."

19 Jongkind, "Nature and Limitations," 6–17.

20 For examples, see Klaus Wachtel and David C. Parker, "The Joint IGNTP/INTF *Editio Critica Maior* of the Gospel of John: Its Goals and Their Significance for New Testament Scholarship" (paper presented at the annual meeting of the SNTS, Halle, 2005), 9, http://epapers.bham.ac.uk/754/1/2005_SNTS_WachtelParker.pdf; Klaus Wachtel, "Towards a Redefinition of External Criteria: The Role of Coherence in Assessing the Origin of Variants," in *Textual Variation: Theological and Social Tendencies? Papers from the Fifth Birmingham Colloquium on the Textual Criticism of the New Testament*, ed. David C. Parker and H.A.G. Houghton, Texts and Studies Third Series 6 (Piscataway, NJ: Gorgias, 2008), 114, 126;

ously not questioning the math (mere addition and division) involved in pre-genealogical coherence. Such is clearly objective. Rather, the issue is *what* is being added and divided, namely, agreement at points of variation. The issue is that these "points of variation" all have boundaries that must be set by human editors and the decision is not always obvious. As an example, Jongkind notes the omission of all three articles in 03 in the phrase ἐξ ὅλης τῆς καρδίας σου, καὶ ἐξ ὅλης τῆς ψυχῆς σου, καὶ ἐξ ὅλης τῆς διανοίας in Mark 12.30. Should this be counted as one variant or three? The decision will have a direct influence on how much 03 agrees with other witnesses.

The problem of demarcating variation is well known and Jongkind is neither the first to recognize it nor the only one to criticize the CBGM for it. Bengt Alexanderson concludes that any division of texts at all for statistical purposes is "all arbitrary" given that "a 'place of variation,' a reading, a variant, a passage can be anything."[21] This is, however, both overstated and partially wrong. A "place of variation" is not the same as a "variant" and, while editors can and do disagree about where to start and stop their comparisons of texts, the decisions they make are not thereby arbitrary. There are principles that guide their decisions.[22] Alexanderson himself demonstrates this when he claims that "in reality" (!) there are fifty-seven places of variation in Jas 1.1–10 rather than the ECM's fifty. Clearly, Alexanderson himself thinks there is some reality to be found in such divisions. They may not be quantifiable in precisely the way that, say, counting cars on a highway is, but this does not make their quantification nor the statistics based on them meaningless.[23]

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idem, "The Coherence-Based Genealogical Method: A New Way to Reconstruct the Text of the Greek New Testament," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 128.

21 Bengt Alexanderson, *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method* (*CBGM*) *and the Editio Critica Maior* (*ECM*), Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014), 65.

22 For an excellent discussion, see Michael Bruce Morrill, "A Complete Collation and Analysis of All Greek Manuscripts of John 18" (Ph.D. diss., University of Birmingham, 2012), 55–65. For Mink's comments on delineating variant units, see his "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 27–28.

23 Thus, we must disagree with Zuntz's wonderful way of expressing the objection: "Variant readings can fruitfully be compared and grouped on more than one principle, but they cannot reasonably be added up or reduced to percentages like the factors of an arithmeti-

Still, Jongkind and Alexanderson are right to remind us that human judgment is involved in the quantification. Despite the impression given by how detailed their presentation is, the CBGM's statistics are ultimately based on editorial judgment.[24] This certainly warrants due care to avoid basing important judgments on slim differences, but it need not result in total skepticism.[25] Our study of the Harklean Group and the Byzantine text below should go some way to assuaging concerns about the severity of this problem.

1.2.2 Reversed Relationships

A more serious challenge comes with Jongkind's second objection in which he illustrates how the CBGM will invert certain relationships where contamination is involved.[26] The problem for the CBGM is that it assumes that more prior readings in a witness make it an ancestor to other witnesses. Jongkind gives two scenarios where contamination overturns this basic assumption.[27]

The first is a case where a heavily corrupted witness has an increasing level of influence on a series of other witnesses. To illustrate, Jongkind imagines a group of five witnesses in which R is copied from A and deviates from it in ten of 100 places. Three other witnesses are also descended from A such that A → 1 → 2 → 3. But each of the latter three is increasingly influenced by R such that 3 is more influenced by R than either 1 or 2. The result is that witness 1 receives three readings from R, witness 2 receives six, and witness 3 receives nine. The resulting variation among the five witnesses is given in Table 15.

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cal sum. What is the sum total of, say, an egg plus a grape plus a unicorn?" Günther Zuntz, *The Text of the Epistles: A Disquisition upon the Corpus Paulinum*, Schweich Lectures (London: Oxford University Press, 1953), 58.

24 Jongkind suggests that the use of three decimal places in quantifying pre-genealogical coherence is "unjustified." ("Nature and Limitations," 7 n. 22). However, see our introduction (§ 3) for Mink's reasoning for this.

25 Jongkind himself models the careful use of such slim margins in his example of 323 and 322. The two differ in only five places in James in the CBGM and 323 is marked the ancestor by only a single reading. This fits with previous study of these manuscripts (W.J. Elliott, "The Relationship between 322 and 323 of the Greek New Testament," *JTS* 18 [1967]: 423–425) and Jongkind shows how the two variants in James that flow the opposite direction in the CBGM both have ready transcriptional explanations.

26 As Jongkind notes, this problem is discussed by Mink in "Problems," 49–59, 84 n. 107.

27 For the problem in Revelation, see the discussion in Markus Lembke, "Besonderheiten der griechischen Überlieferung des Textes der Offenbarung und ihre Auswirkungen auf die Textkritik," in *Book of Seven Seals: The Peculiarity of Revelation, Its Manuscripts, Attestation, and Transmission*, edited by Thomas J. Kraus and Michael Sommer, WUNT I 363 (Tübingen: Mohr Siebeck, 2016), 226–230.

TABLE 15 *The resulting readings in the case of successive influence from a corrupted manuscript* (R)

Witness	Readings at ten places of variation									
A	a	a	a	a	a	a	a	a	a	a
R	b	b	b	b	b	b	b	b	b	b
1	b	b	b	a	a	a	a	a	a	a
2	b	b	b	b	b	b	a	a	a	a
3	b	b	b	b	b	b	b	b	b	a

Assuming that the local stemmata are all constructed as $a \rightarrow b$, the result from the CBGM would be a misrepresentation of the actual relationships. This can be shown in Figure 33 where the left diagram shows the actual relationship of the five witnesses and the right shows their relationship in the CBGM. The dashed lines represent contamination. (In this case the CBGM would produce a global stemma that matches the predominant textual flow diagram and so is not shown.)

The salient feature here is the inversion of R. This is the result of the CBGM selecting the ancestor of each witness based on both the degree of similarity and the proportion of prior readings. Since R is most similar to 3 and yet has more posterior readings, the CBGM wrongly places it as the descendant of 3 rather than as its ancestor (and source of contamination).[28]

The second of Jongkind's scenarios is essentially a reversal of the first. In this case, contamination improves a witness's text to the point that it ends up with more prior readings than its ancestors.[29] The data for such a scenario are given in Table 16. In this case, the final three *a* readings in witness 3 have come by way of R rather than from witness 2. Unlike in the first example, here the global stemma produced by the CBGM would differ from the predominant textual flow diagram. These are shown in Figure 34. As before, the local stemmata are assumed to be constructed in the form $a \rightarrow b$.

28 This is, of course, the classic problem that contamination presents for stemmatics. See Michael W. Holmes, "Working with an Open Textual Tradition: Challenges in Theory and Practice," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 73.

29 Mink discusses a more complicated form of the same problem in "Problems," 49–51, 67–

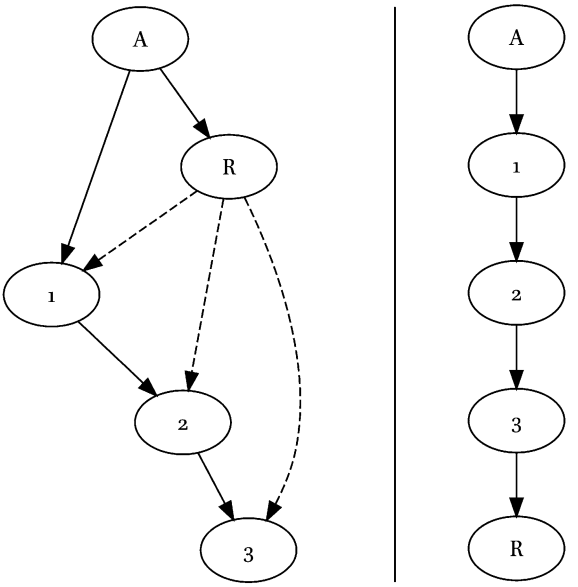

FIGURE 33 *The historical relationship* (*left*) *and the identical textual flow diagram and global stemma produced by the* CBGM (*right*)

From these scenarios, Jongkind concludes that the major problem with using the CBGM for reconstructing history is that it uses a "false proxy" for genealogy. The CBGM assumes that a greater proportion of posterior readings is equivalent to a later text and, conversely, that a greater proportion of prior readings is equivalent to an earlier text. But where contamination has occurred, it may happen that an ancestral witness has more posterior readings than its descendants and vice versa. As Jongkind explains, this means that, in the CBGM, "the term 'earlier text' does not necessarily mean that the text of this witness was in existence before the text with which it is compared."[30] If true, this could present a serious problem for Wachtel's claim that the global stemma can provide "the relative chronology of the development of the text."[31] To be sure, Jongkind is convinced that the CBGM does offer a valuable "heuristic" tool and one that, in many cases, will be able to identify the actual relationships between witnesses. But the problems posed by the wrongful conflation between the

74 as does Alexanderson, *Problems*, 74. Mink says, "The problems in this field have not been definitely solved and further research is necessary" (67).

30 Jongkind, "Nature and Limitations," 17.

31 Wachtel, "The Coherence Method and History," 6.

TABLE 16 *Readings resulting from contamination that improves the number of prior readings in a descendant* (3)

Witness	Readings									
A	a	a	a	a	a	a	a	a	a	a
R	b	a	a	a	a	a	a	a	a	a
1	b	b	b	a	a	b	b	b	b	b
2	a	a	a	a	b	b	b	b	b	b
3	a	a	a	a	b	b	b	a	a	a

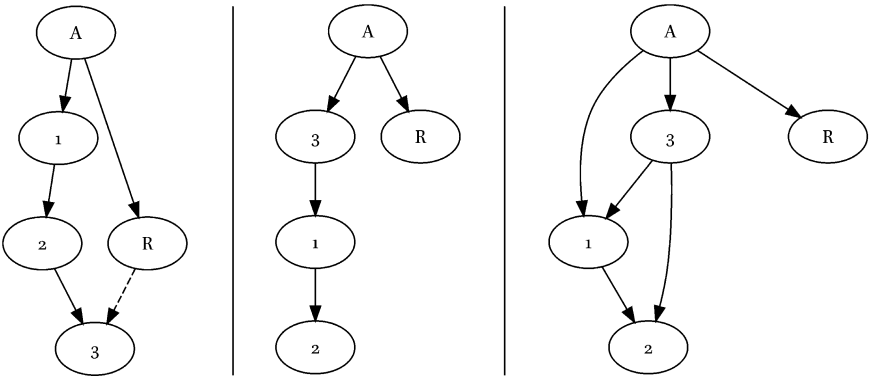

FIGURE 34 *The historical relationship* (*left*)*, the textual flow diagram* (*middle*)*, and global stemma* (*right*) *produced by the* CBGM *from the data in Table 16*

relationship of readings and the relationship of witnesses mean that the CBGM "will not lead to an adequate or viable hypothesis of the development of the text."[32]

1.3 *An Initial Assessment*

The two scenarios proposed by Jongkind deserve careful consideration not only as abstractions that highlight a problem but much more so because Jongkind has suggested a real case of the problem. Before turning to that, we need to consider his two abstract scenarios in further detail. In particular, we need to consider Mink's reaction to them that "no method can detect historical

32 Ibid., 19.

scenarios which did not leave any trace."[33] In both of Jongkind's scenarios, there is nothing in the data to suggest the actual relationships. This is not to avoid the problem. It is a significant point because there is nothing about the CBGM to keep it from incorporating any outside data that divulged the witnesses' true relationship.[34] If we knew by way of colophons, for example, that witness R in the first scenario was used by the scribes of 1, 2, or 3, it would be a simple matter of splitting the *b* readings in such a way that the local stemmata showed *b1* → *b2* in all the cases where R was known to be used by 1, 2, and 3. A similar change could be made in the second scenario as well. Where no data suggested the real relationships, the CBGM would be at no special disadvantage.

In the second scenario, we should note that the distortion between the actual relationship and the CBGM's genealogies cause little harm.[35] The study of genealogical coherence based on the textual flow diagrams would not result in any false cases of multiple emergence. If the global stemma was used to eliminate witnesses, it would still correctly eliminate witness 2 as the most corrupt. Moreover, it would show that there is contamination involved in the relationship of 1, 2, and 3. But it would replace the role of R with A and invert the direction of influence between 2 and 3. This is in keeping with Mink's own view quoted earlier that the results of the CBGM are not precise history and require informed interpretation.[36] Jongkind apparently agrees in substance with this point when, after noting that the second scenario fares better in the CBGM, he says that "as a heuristic tool it [the CBGM] provides valuable indications of relationship that are worth investigating in order to adjusting [*sic*] or confirm the picture suggested by the method."[37]

Returning to the first scenario, its value is somewhat diminished by its artificiality. As described, we are told to imagine a scenario of five manuscripts that are part of a larger tradition. But this larger tradition has no influence whatsoever on these five manuscripts. A footnote explains that the example would work the same if only the ten relevant variations were used, but this would then result in the "counter-intuitive notion" that R agrees with its exemplar in

33 Mink, "Some Notes," 8. The same problem confronts Lachmannian stemmatics when a scribe has managed to correct all the "peculiar errors" of his exemplar. See Paul Maas, *Textual Criticism*, trans. Barbara Flower (Oxford: Clarendon Press, 1958), § 11; cf. § 6.

34 It is thus a mistake to criticize the CBGM because an adequate hypothesis about textual relations "will need much more input from actual history than the CBGM *allows for*" (Jongkind, "Nature and Limitations," 17; emphasis added).

35 Carlson ("Comments," 2) makes the same observation.

36 Mink, "Some Notes," 11–12.

37 Jongkind, "Nature and Limitations," 16.

no places relevant to the CBGM.[38] In other words, their pre-genealogical coherence would be zero. They would not even be documents of the same literary work in that case! The artificiality becomes more striking still when we consider that 1, 2, and 3 have never diverged from R in a way that does not also agree with A. To put it another way, 1, 2, and 3 have never miscopied R in such a way that clearly shows their descent from it (e.g., $b \rightarrow c$).[39] If there was even one such place, then it would require attention in the construction of the global stemma.[40] As it is, the example succeeds in showing how the CBGM may be misled, but at the risk of being unrealistic.

Despite these clarifications, it must be said that Jongkind's scenarios remain important insofar as they raise questions about how priority in readings relates to priority in time. Specifically, they raise important questions about the CBGM's basic assumption that the genealogy of witnesses can be based on the genealogy of their readings. The problem for the CBGM is not the principle as stated but that the principle is applied as *always* being true. In fact, variants *as variants* may be related in ways their attesting witnesses are not. In fact, a strict correlation exists only in the first instance. Beyond that there are any number of ways in which subsequent scribes may reverse cause with effect, so to speak.[41] Jongkind has shown two ways, both involving contamination. Another way is when obvious or easy-to-fix "mistakes" are changed. Changes in verb tense, the addition of articles, and the substitution of conjunctions are all types of variation that can easily be reversed without any necessary reference to another manuscript. In these cases, the CBGM would be wrong to apply the same local stemma ($a \rightarrow b$) to all witnesses.

Thankfully, the use of coherence can suggest possible cases of such reversals. Moreover, the problem can be accounted for by splitting the readings in a

38 Ibid., 12 n. 36. The number 100 was chosen so that the resulting percentages would look more like those in the CBGM.

39 The same point is made by Mink, "Some Notes," 8–9.

40 On the problem of prior readings found only in descendant witnesses, see Mink, "Problems," 59–63.

41 The problem of such reversal is not often discussed in the literature on stemmatics although it is clearly known. See, for example, Caroline Macé and Philippe V. Baret, "Why Phylogenetic Methods Work," in *The Evolution of Texts: Confronting Stemmatological and Genetical Methods, Proceedings of the International Workshop Held in Louvain-la-Neuve on September 1–2, 2004*, ed. Caroline Macé et al., Linguistica Computazionale 24–25 (Rome: Istituti Editoriali e Poligrafici Internazionali, 2006), 98. Interestingly, Parker lists it as one among three crucial problems that the CBGM solves: David C. Parker, *An Introduction to the New Testament Manuscripts and Their Texts* (Cambridge: Cambridge University Press, 2008), 169.

local stemma. Where, for example, *a* is deemed prior to *b* in some but not all instances, the readings may be split and the local stemma redrawn as *a1* → *b1* → *a2* → *b2*. Specific witnesses would then be assigned to the split readings as appropriate.[42] In this case, there is no difference between the two *a* readings or the two *b* readings understood as isolated readings. But they do differ in terms of their relationships when considered as readings of particular witnesses and this needs to be accounted for.

In doing this we need to recognize that we are reversing the CBGM's fundamental principle. Rather than deriving the genealogy of witnesses from the genealogy of their readings, we are instead deriving the genealogy of their readings from the known (by whatever means) genealogy of the witnesses. This should be taken as an example of the circularity allowed by the CBGM: the relationships between witnesses and the relationships between their readings are mutually informing. In this way, Jongkind's scenarios provide a necessary qualification on the CBGM's fundamental principal that the hypothesis about witness relationships "has to rest upon the genealogical relationships between the variants they exhibit."[43] There are cases where the relationship of witnesses known by other means requires that we adjust the natural assumption about the relationships of their readings. There is, of course, nothing about the CBGM that prohibits its hypotheses from being revised in light of such information.

2 The Harklean Group and the Byzantine Text

Given the artificial nature of Jongkind's scenarios it is all the more significant that he has suggested a known relationship that presents the problem of his first scenario. The relationship is the one between the text of Byzantine manuscripts and the text of the Harklean Group, the members of which will be detailed below. By a remarkable series of factors, both texts can be pinpointed in time and even, with the Harklean Group, in place. The Harklean Group is so named because of its remarkable affinity to the Syriac translation of Thomas of Harkel completed, according to his rich colophons, in A.D. 616 near Alexandria, Egypt. Moreover, thanks to his extremely literal translation

42 To my knowledge, split readings have only been used for posterior readings (e.g., *a* → *b1*; *c* → *b2*). Cf. Mink, "Problems," 15 (fig. 2); Georg Gäbel et al., "The CBGM Applied to Variants from Acts: Methodological Background," *TC* 20 (2015): 3 (guideline 9). But I can see no reason why this would not work for both prior and posterior readings (e.g., *a1* → *b1*; *a2* → *b2*).

43 Wachtel, "Coherence Method and History," 3.

style, reconstructing his Greek *Vorlage* is possible with unusual confidence. By identifying the Harklean Group of Greek manuscripts with Thomas's *Vorlage*, we are thus able to date the *text* of this group centuries earlier than the parchment that preserves it and, thus, centuries earlier than the first evidence for the mature Byzantine text in the Catholic Epistles.

What makes this latter point important is that this chronology is what enabled Klaus Wachtel to show that the Greek text translated by Thomas in the Catholic Epistles and now represented so well in the Harklean Group, is a precursor to the mature Byzantine text first attested there in the ninth-century.[44] Thus, in contrast to the theory that the Byzantine text is the result of a fourth-century recension, Wachtel argues that it is the result of a centuries-long process of accumulating smoother, more acceptable readings from earlier periods. In the Catholic Epistles, Wachtel found three distinct phases of this development: one in the third–fourth-century, one in the fifth–sixth, and a final phase in the ninth-century marked by the transition to minuscule script.[45] This early phase is identified by what Wachtel calls *Sondergut*, a special set of readings wherein early majuscules agree with the majority of Greek manuscripts against the original text.[46] These readings were preferred because they typically smooth textual infelicities. Over time, these readings accumulated into the fully formed Byzantine text known to us in the ninth-century and beyond.

It is Thomas's Syriac translation that takes center stage in Wachtel's middle phase. Beyond its known provenance, the Harklean Syriac is valued because Thomas tells us that he used a single "very accurate and carefully considered Greek manuscript" (ܝܘܢܳܢܝܬ ܕܕܝܩ ܒܣܦܪ ܘܒܣܬ ܟܬܒ) for Acts and the Catholic Epistles.[47] Although his translation largely agrees with the mature Byzantine text outside the Catholic Epistles, here it is noticeably less Byzantine although more so than Wachtel's first stage represented in the *Sondergut*. Given his concern for accuracy, Thomas likely chose a text well accepted in the Greek speaking church in Egypt where he worked.[48] Thus Wachtel suggests that

44 Klaus Wachtel, *Der byzantinische Text der katholischen Briefe*, ANTF 24 (Berlin: Walter de Gruyter, 1995), esp. 194–198; Matthew Spencer, Klaus Wachtel, and Christopher J. Howe, "The Greek Vorlage of the Syra Harclensis: A Comparative Study on Method in Exploring Textual Genealogy," *TC* 7 (2002), http://rosetta.reltech.org/TC/v07/SWH2002/.

45 Wachtel, *Der Byzantinische Text*, 197–198.

46 Ibid., 84–87, 190–198. For Wachtel, the NA27 is taken as this original text.

47 For the full colophon for Acts and the Catholic Epistles, see Joseph White, *Actuum Apostolorum et epistolarum tam catholicarum quam paulinarum, versio Syriaca Philoxeniana*, vol. 1 (Oxford: Clarendon Press, 1799), 274–275.

48 For the details of Thomas's life, see Bruce M. Metzger, *The Early Versions of the New*

Thomas's text in the Catholic Epistles is less Byzantine because only here had it not yet reached its full maturity.[49] Although originally limited to the Catholic Epistles, Wachtel has since expanded the same basic view to the Gospels and it has been adopted in the standard introductions.[50]

2.1 *The Harklean Group and the Byzantine Text in the CBGM*

Wachtel's thesis about the first phase of the Byzantine text's development comports well with the CBGM's results. The earliest witnesses (P72, 01, 02, 03, and 04) all lie directly below the initial text and above the Byzantine witnesses. The problem, as Jongkind notes, is that, in the CBGM, members of the Harklean Group are "placed below the late Byzantine form of text as found in witness 35 and 18, but which, according to Wachtel represent an early stage of the development of the 'Koine text.'"[51] Thus, we have what appears to be a clear case where the CBGM has reversed the historical relationship, placing the Harklean Group below key witnesses of the mature Byzantine text when they should be above them (see Figure 35).

A consideration of the data behind this textual flow shows 35 and 18, two "pure" Byzantine witnesses according to the ECM, as potential ancestors for members of the Harklean Group (1611, 1292, 2138, 2200, etc.). There is, however, an important distinction within the CBGM between a "potential ancestor" and a "stemmatic ancestor."[52] A potential ancestor is simply a witness that has

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Testament: Their Origin, Transmission, and Limitations (Oxford: Clarendon Press, 1977), 68–69; Arthur Vööbus, *Early Versions of the New Testament: Manuscript Studies*, Papers of the Estonian Theological Society in Exile 6 (Stockholm: Estonian Theological Society in Exile, 1954), 105–106.

49 Wachtel, *Der Byzantinische Text*, 189; Spencer, Wachtel, and Howe, "Greek Vorlage," §3. This is partly attributed to the distinct canonical history of the Catholic Epistles according to Wachtel.

50 Klaus Wachtel, "The Corrected New Testament Text of Codex Sinaiticus," in *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript*, ed. Scot McKendrick et al. (London: British Library, 2015), 101–105; idem, "The Byzantine Text of the Gospels: Recension or Process?" (paper presented at the SBL Annual Meeting, New Orleans, November 23, 2009), http://www.uni-muenster.de/NTTextforschung/cbgm_presentation/ByzEvvPDF.zip. For acceptance, see Bruce M. Metzger and Bart D. Ehrman, *The Text of the New Testament: Its Transmission, Corruption, and Restoration*, 4th ed. (New York: Oxford University Press, 2005), 279; Parker, *Introduction*, 305–306.

51 Jongkind, "Nature and Limitations," 14 n. 38.

52 Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in*

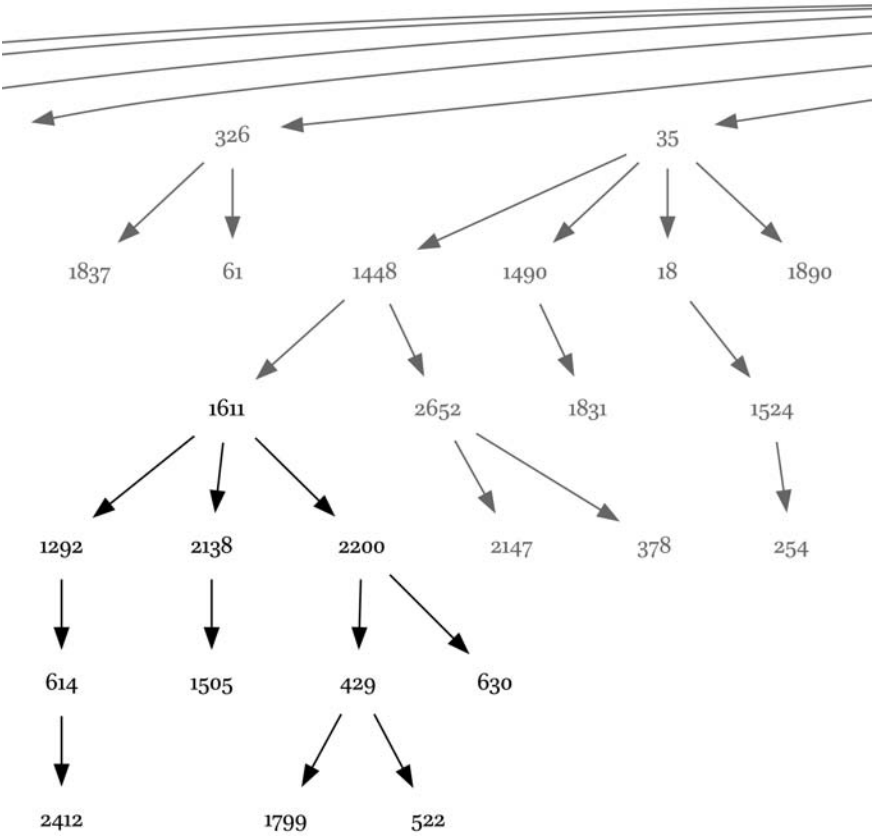

FIGURE 35 *A portion of the predominant textual flow diagram for the Catholic Epistles showing the Harklean Group (161, 1292, 2138, etc.) beneath witness 35*

more prior than posterior readings in relation to another witness. A stemmatic ancestor is one that is necessary, as determined by the principles of parsimony, to explain the text of the descendant in the substemma and so in the global stemma. For any given witness, there may be dozens of potential ancestors that are not stemmatic ancestors. In order to understand whether the Harklean Group provides an example of Jongkind's scenario, we first need to consider the nature and position of the Harklean Group in more detail.

Contemporary Research, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 162.

2.2 *Previous Study of the Harklean Group*

The first person to identify a close connection between Greek minuscules and the Syriac translations in the Catholic Epistles was Hermann von Soden. As part of his "Jerusalem" or "I-text," he identified a number of subgroups in the Catholic Epistles. Among these, his I^b and I^c subgroups were notable for their close relationship to the Syriac versions. In his view, the text of the two Syriac translations in the Catholic Epistles (he discusses only the Peshitta and the Harklean) goes back earlier than both subgroups.[53] Von Soden further divided this latter subgroup into two lines of transmission, I^{c1} and I^{c2}, and it is here that we find a number of Greek minuscules that are members of the Harklean Group.[54] Importantly, his placement of the Harklean Syriac version as predating the development of his own "K-text" (i.e., the Byzantine text) and yet dependent on his earlier "I-H-K text" anticipates Wachtel's later conclusions about the Harklean Syriac as representing a midpoint in the Byzantine text's development.

Following from von Soden, Christian-Bernard Amphoux made the next major step in connecting Greek minuscules to the Harklean Syriac. In his first study, Amphoux used INTF's newly available *Teststellen* for James to isolate seventy-four witnesses that disagreed with the "majority text" (defined by a pure numerical count) in five or more cases.[55] He then located groups by looking for disagreements with both the majority text and with the great uncials (01 and 03). This resulted in several groups of which the most important for us is the group he identified with manuscript 614. This group includes 206, 254, 429, 522, 614, 630, 1448, 1505, 1524, 1611, 1890, 2138, 2200, 2412, and 2495. Many of these are found in von Soden's three I subgroups, but Amphoux's data challenged the

53 Hermann Freiherr von Soden, *Die Schriften des Neuen Testaments in ihrer ältesten erreichbaren Textgestalt, hergestellt auf Grund ihrer Textgeschichte*, vol. 1.3, 2nd ed. (Göttingen: Vandenhoeck & Ruprecht, 1911), 1877–1883. Von Soden's main discussion of the Syriac focuses on the Old Syriac for which we have no evidence in the Catholic Epistles. See Hermann Freiherr von Soden, *Die Schriften des Neuen Testaments in ihrer ältesten erreichbaren Textgestalt, hergestellt auf Grund ihrer Textgeschichte*, vol. 1.2, 2nd ed. (Göttingen: Vandenhoeck & Ruprecht, 1911), 1573–1594.

54 Soden, *Die Schriften*, 1911, 1.3:1688. Von Soden's manuscript numbers, it must be remembered, differ from their current Gregory-Aland designations. Thus 208 in von Soden is Gregory-Aland 1611. Conversion tables are found in Kurt Aland, *Kurzgefaßte Liste der griechischen Handschriften des Neuen Testaments*, ANTF 1 (Berlin: Walter de Gruyter, 1994), 390–427.

55 Christian-Bernard Amphoux, "Les manuscrits grecs de *L'épître de Jacques* d'après une collation de 25 lieux variants," *Revue d'histoire des textes* 8 (1979): 247–276.

precise delineation of these groups. He further suggested that they should be treated as a distinct text-type, one with affinities to the "Western" text.

After further investigation, Amphoux expanded this group and renamed it to "group 2138" after its oldest member and the one he felt stood closest to the source.[56] Even more importantly, Amphoux was able to establish a very close relationship between group 2138 and the Harklean Syriac in James. Out of eighty-four places where von Soden's H and K texts disagreed, Amphoux found that his group 2138 agreed with the Harklean Syriac in sixty-eight of them (81 percent), a number in keeping with the level of agreement between the other members of the group.[57] This showed not only a close agreement between his group 2138 and the Harklean, but, more importantly, it showed some independence from both of von Soden's other dominant text-types. From this Amphoux again suggested that the group represented a third text-type somewhat comparable to the "Western" text-type as found in Acts.[58] He further split group 2138 into five subgroups, a few of which allowed for precise relationships to be established within the group. He suggested that 2138 was used by 1518 and 1890 and that 2138 has a shared ancestor with 1505. This latter manuscript he understood to be the ancestor of 2495.

A number of these relationships were confirmed by the more detailed work of Barbara Aland in her work on the Syriac tradition of the Catholic Epistles.[59] Unlike Amphoux, who worked with a Latin translation of the Syriac,[60] Aland worked directly from the Syriac. Thomas's rigid translation technique enabled a confident retroversion into Greek and she was then able to check this Greek text against INTF's recently completed collations. This test corroborated Amphoux's work in James and expanded it to the other large Catholic Epistles. Aland found that the highest agreement with her retroversion was with minuscules 2138, 1505, 1611, and 2495. These four she subsequently collated in

56 Christian-Bernard Amphoux, "Quelques témoins grecs des formes textuelles les plus anciennes de L'épitre de Jacques: le groupe 2138 (ou 614)," *NTS* 28, no. 1 (1982): 91–115.

57 Christian-Bernard Amphoux, "La parenté textuelle du sy^{h} et du groupe 2138 dans l'épître de Jacques," *Biblica* 62 (1981): 267.

58 Amphoux notes the agreements between the Harklean Syriac marginal readings and Codex Bezae and the agreements between Bezae and 614, a member of his group 2138. For 614 and the Harklean Syriac in Acts, see the J.M. Creed's introduction to A.V. Valentine-Richards, *The Text of Acts in Codex 614* (*Tisch. 137*) *and Its Allies* (Cambridge: Cambridge University Press, 1934), xvi–xix. For the "Western" text in the Catholic Epistles, see further Jean Duplacy, "'Le texte occidental' des Épîtres Catholiques," *NTS* 16, no. 4 (1970): 397–399.

59 Barbara Aland, *Das Neue Testament in syrischer Überlieferung: I. Die großen katholischen Briefe*, ANTF 7 (Berlin: Walter de Gruyter, 1986), 41–90.

60 Amphoux, "La parenté textuelle du sy^{h}," 267.

full and produced a stemma for what she designated "family 2138."[61] A larger, though less coherent group, she designated as the "Harklean Group."[62] Along with the members of family 2138, this group included 206, 429, 522, 614, 630, 1292, 2200, and 2412. Two other manuscripts, 1852 and 1448, were said to be in the near vicinity. These are all witnesses identified by Amphoux in James but Aland leaves out 1518, 189, 1108, 1448, 1799, 1758, and 1831 which he included. Curiously, none of Amphoux's work is cited by Aland.

The most recent study on the Harklean Group was done by Klaus Wachtel, Matthew Spencer, and Christopher J. Howe in relation to the CBGM.[63] Limiting themselves to James, the Harklean Group was delimited as manuscripts that are (1) more similar to 1505 than 1505 is to the majority text and (2) closer to 1505 than they are to the majority text themselves. The majority text, as with Amphoux, is defined quantitatively. This resulted in twelve witnesses which matched Aland's original grouping adding only 1890 and 1799.[64] Along with these witnesses, they compared a retroversion of the Harklean Syriac in 495 of 761 passages in James where the Syriac could be assigned "a single unambiguous reading."[65] These data were then used in the CBGM to produce a diagram of the Harklean Group and their retroversion. The predominant textual flow diagram is given in Figure 36 showing the top two closest potential ancestors for each witness. This is restricted to James and the "H" witness represents the retroversion.

There are a number of differences here with the textual flow diagram shown earlier in Figure 35. The most important difference is the relationship of the Harklean Group to the initial text (A) and to witness 35. In Wachtel's diagram, the Harklean Group descends from A with only two intermediaries (1852 and 1448), neither of which is deemed Byzantine in James by the ECM. A lone Byzantine witness (35) influences the Harklean Group only as a second potential ancestor. This is different from the textual flow for the entire Catholic Epistles

61 Her stemma agrees with Amphoux's subgroupings at several points.

62 Aland used the term "group" (*Gruppe*) as a substitute for Colwell's "tribe" for which she could find no German equivalent (*Das Neue Testament*, 86 n. 62.). Colwell had distinguished a "family" as a group for which a stemma could be produced and a "tribe" as a group with closer relations than a text-type but for which no clear stemma could be produced. See E.C. Colwell, "Hort Redivivus: A Plea and a Program," in *Studies in the Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 162–163.

63 Spencer, Wachtel, and Howe, "Greek Vorlage."

64 Both were included by Amphoux.

65 Spencer, Wachtel, and Howe, "Greek Vorlage," §11. The data for this retroversion are not given in the article.

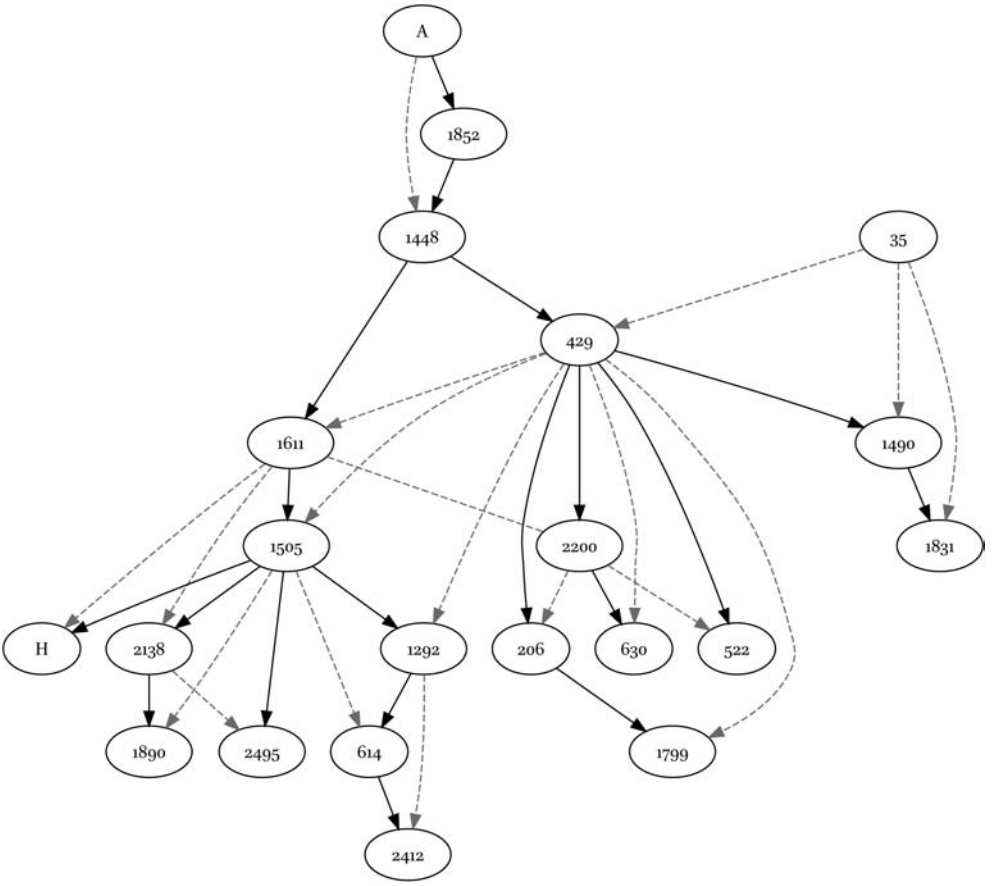

FIGURE 36 *The predominant textual flow of the Harklean Group in James showing both the first (solid lines) and second (dashed lines) closest potential ancestors of each witness*

(Figure 35) where 35 is an ancestor of 1448 and thus sits between the Harklean Group and the initial text (A).

The reason for the difference is that the closest potential ancestor for 1448 changes from James to the Catholic Epistles as a whole. In James, the closest ancestor of 1448 is 1852. Witness 35 is a descendant and not a potential ancestor of 1448, having the prior reading six more times than 1448. Within the Catholic Epistles as a whole, however, the picture changes. Witness 35 has the prior reading two more times than 1448 and is now its closest potential ancestor. This slim difference explains the different placement in the two textual flow diagrams.[66] Besides the placement of 35, the other notable position here is

66 Noting the single difference that determines the relationship of 429 and 35 in James,

that of the retroverted Syriac which sits in a terminal position in these text flows, beneath 1505, 1611, and 1448. Given that the Syriac dates to the early seventh-century and the earliest Harklean Group witness dates to the eleventh (2138), this is something of a surprise. Wachtel notes that "a higher position would fit the early date of the Harclensis better," but goes on to say that "we may conclude with due caution that the form of text preserved in the Greek witnesses is prior to that translated into Syriac in 616 A.D."[67] This logic, in which more prior readings are taken as evidence of an earlier text, is precisely the logic that Jongkind's scenarios challenge. His scenarios show cases where more prior readings and thus a "higher position" should not be taken as implying an earlier date. In light of this, it is worth calling attention to a point Wachtel makes in the conclusion of the article: the textual flow diagram "represents the relationships among the readings found in the text in a way that does not necessarily reflect the physical transmission of those readings."[68]

2.3 *A Proposed Resolution*

What should be made of this situation? Is it a clear case of falsifying the CBGM or is the CBGM, in fact, right and it is Wachtel's original thesis that needs revision? If the CBGM is right, then the Byzantine text predates the early seventh-century Harklean text in the Catholic Epistles not unlike what we find in the Gospels. There is, after all, a general lack of manuscript evidence for the Catholic Epistles in the period before Thomas's work in Alexandria. The date of our extant Byzantine manuscripts would be little problem since a text can pre-date its manuscript, the Harklean Group being an obvious case in point. So, perhaps it is the case that the vast increase in data used by the CBGM over against Wachtel's original study has clarified the picture and presented us with cause to revise his theory.

This could be the case, but a better solution can be found by attending to some basic matters of definition. Until now we have used the term "Byzantine text" without precise definition just as Jongkind did in his original suggestion of this example. But Wachtel's own argument about the Byzantine text was based on a very specific definition, one that complicates any direct comparison between his results and the CBGM's. For Wachtel, the "Byzantine text form" is defined not as the text of any particular manuscript like 18 or 35, but only

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Wachtel says that being aware of the data behind the "stemma" ("textual flow diagram" would be more accurate) is essential for interpreting it ("Greek Vorlage," § 20).

67 Spencer, Wachtel, and Howe, "Greek Vorlage," § 23.

68 Ibid., § 40.

as those majority readings "by which the text of the Byzantine church differentiates itself from earlier text forms but, above all, *from the original text*. Byzantine readings are thus those which characterize the Byzantine text as a late text form, distant from the original."[69] By contrast, the CBGM relates whole witnesses to each other even where one or both attest the "original text." The stark difference in definition shows itself clearly when comparing the amount of data used. Wachtel's comparison of the Byzantine text and the Harklean Syriac rests on just thirty places of variation.[70] Contrast this with the relationship between 35 and 1611 in the CBGM which is determined by 3,043 places including many where one or both attest the initial reading. Some difference in results is thus not surprising. Still, there remains a question as to how a witness that preserves a presumably late text form like 35 could be an ancestor to a witness like 1611 which largely preserves a seventh-century text.

2.3.1 Using the Global Stemma

In looking more closely at the relationship in the CBGM we can start by saying how not to proceed. Despite their prominent use by the editors and in the literature on the method, we should not use textual flow diagrams for our investigation. This is because they present an oversimplified picture of witness relationships. In particular, they connect each witness only with its closest potential ancestor and they show nothing about the strength of that relationship. The

69 "Als 'byzantinisch' werden diejenigen Mehrheitslesarten bezeichnet, durch die sich der Text der byzantinischen Kirche von früheren Textformen, vor allem aber *vom ursprünglichen Text* unterscheidet. Byzantinische Lesarten sind also solche, die den Byzantinischen Text als späte, ursprungsferne Textform charakterisieren" (Wachtel, *Der Byzantinische Text*, 7–8; emphasis added). This is the same definition used by the ECM2, 22*.

70 Wachtel, *Der Byzantinische Text*, 195 n. 85. An early attempt to resolve this problem on our part included a complete collation of the four extant Harklean Syriac manuscripts of the Catholic Epistles (New College 333 in Oxford, the British Library's Add. 14474, Cambridge University Library Add. 1700, and John Rylands Library MS Syr. 15). With the first three I had the added benefit of personal examination; all were collated from digital images from which I established the first critical Harklean text for these books. This Syriac text was then retroverted into Greek, noting all places where retroversion was uncertain or where my judgment disagreed with that of Aland or with the ECM. This data was then fed into the CBGM with the hope that the retroversion could be directly compared to all the Greek witnesses therein. This would have had the added benefit of showing the viability of including versional evidence in the CBGM. Unfortunately, technical problems could not be resolved in time by the staff in Münster and this study had to be done by means of the Greek manuscripts instead.

textual flow diagrams are not designed for studying the text's development as a whole; they are only designed to study how individual readings may have developed in the course of the text's overall transmission. This is significant because it is in the textual flow diagram that the Harklean Group is placed beneath 35. The question is whether this relationship is unique to the text flow diagram or whether it holds for the CBGM's global stemma as well. To answer this question, we need to construct a global stemma for the Harklean Group.

As explained in chapter two, the construction of the global stemma has important structural differences from predominant textual flow diagrams. Unlike predominant textual flows, the global stemma connects each witness with multiple ancestors and only with those that are necessary to explain its resulting text. A text may be "explained" either by sharing the reading with the ancestor or by having readings judged posterior to readings in the ancestor. When the number of ancestors has been reduced to its smallest, the resulting substemma is said to be optimized. A global stemma is simply a compilation of multiple optimized substemmata.

Despite the lack of a complete global stemma for the Catholic Epistles, it is possible to construct portions of it for our purposes.[71] The partial global stemma offered here had to be based on the first version of the CBGM since this is the only dataset that the current substemmata software could use.[72] It is unlikely that the stemma would change dramatically if data for the second version were used. Because the software was not available, a novel approach to optimization was taken based on parsimony: the substemma for each witness was chosen that resulted in (1) the smallest number of unexplained readings from (2) the smallest number of ancestors resulting in (3) the largest number of readings explained by agreement. This process vastly simplified the process without significant risk of including superfluous ancestors.[73] With an optimized substemma for each witness constructed, it was a straightforward matter of combining them into a global stemma.

Before considering the results, it is worth reflecting on the fact that this is the first portion of the global stemma to be constructed beyond the topmost portion shown in chapter two. Even more importantly, it shows how it would be possible to construct a global stemma with significantly less effort

71 See Mink, "Problems," 76.

72 My thanks to Klaus Wachtel for providing the lists of substemmata which I then optimized.

73 As noted in the section on substemmata in chapter two, this procedure would produce the same substemma for witness 35 that Mink found by intervening in the process (cf. p. 46 above).

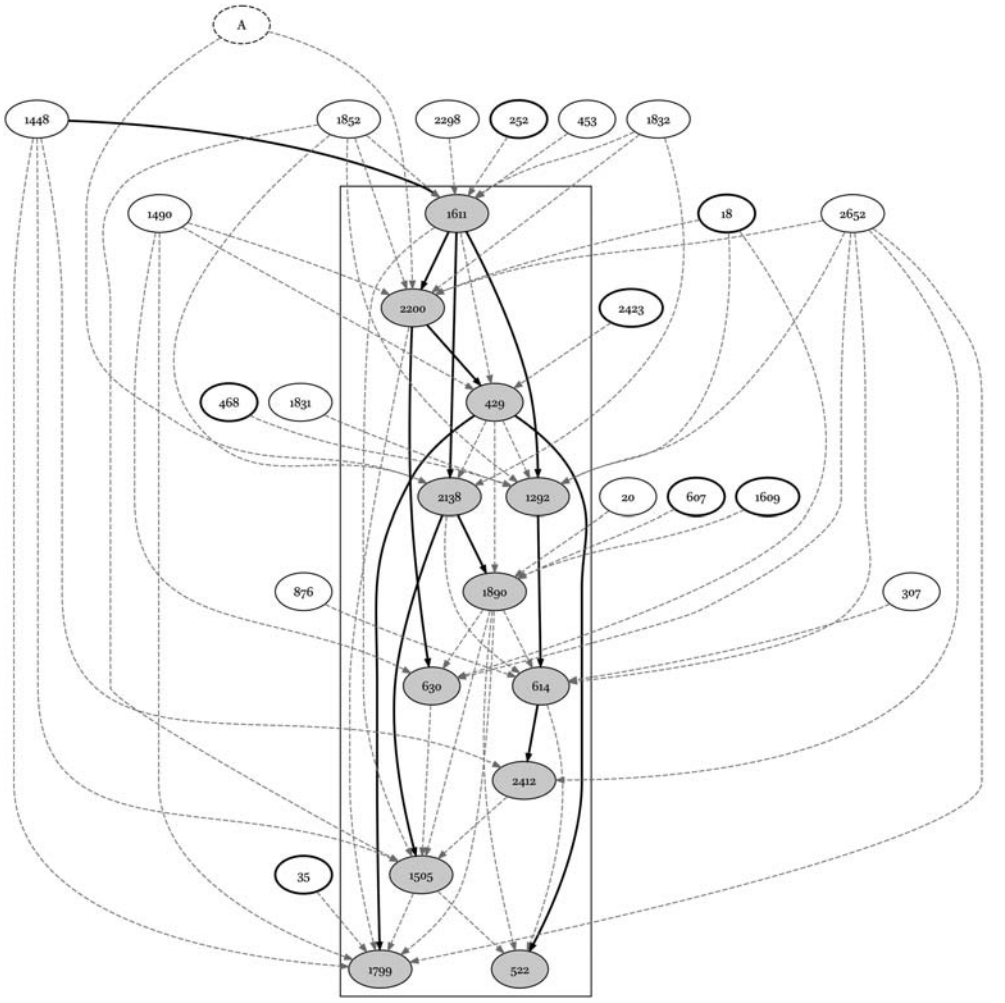

FIGURE 37 *A portion of the global stemma for the Catholic Epistles showing the genealogy of the Harklean Group*

than what is currently required. In fact, the construction could be almost entirely automated using this method. The results could then be scrutinized by the editor in cases where more than one optimized substemmata were available or where particular substemmata included ancestors that made little contribution to the descendant. In any case, the results from our modified method are shown in Figure 37.

Several observations can be made. First, we should note that the vertical distance between witnesses is not necessarily significant. No importance should be attached to the fact that 35 is placed lower in the graph than 876.

This is merely a function of the rendering software.[74] Second, ancestors that contribute the most shared readings to their descendant have been rendered with thicker edge lines (e.g., 1448 → 1611) while Byzantine witnesses are encircled with bolder lines (e.g., 35).[75] Third, the Harklean Group members are taken from the study by Wachtel, Spencer, and Howe with the exception of a few for which substemmata could not be obtained.[76] These witnesses are colored gray and placed inside the center box. Finally, this stemma only incorporates substemmata for the Harklean Group. Data for those outside (such as 1448) were not provided.

As in the predominant textual flow diagram above, the global stemma shows a clear cohesion in the Harklean Group. But here we are given a far more discriminating picture of the sources of influence. Most significantly, the Byzantine witnesses are far less significant. In the case of 1611, for example, 35 is no longer an ancestor since other, more similar ancestors supply the same readings. This is a case where a potential ancestor is not a stemmatic ancestor. The lone Byzantine witness that does influence 1611 is 252 and even this only contributes four readings, all of which could be sourced from 2298 instead, albeit as derivative rather than as agreements. In short, the direct influence of Byzantine witnesses on 1611 is small to the point of being irrelevant. The influence of Byzantine witnesses on other Harklean Group witnesses is likewise small.

In this respect, the global stemma does not present the problems for Wachtel's original thesis that the textual flow diagrams do. Instead, we find that the immediate Byzantine influence on the Harklean Group is minimal. This is a picture much more in keeping with what we would expect from a group of manuscripts that was copied between the eleventh and sixteenth centuries but that largely preserves a text from at least the early seventh-century. This does not mean that the Harklean Group witnesses preserve this text perfectly. We can see this in places where a Byzantine witness like 35 agrees with the Harklean Syriac in attesting readings prior to those attested by the Harklean Group.[77] Such readings are what we would expect to find in manuscripts copied during the dominance of the Byzantine text. In fact, what makes the global

74 The software used was WebGraphviz which can be accessed online at http://www.webgraphviz.com.

75 A witness is considered Byzantine here if it is found in three of the five lists of Byzantine manuscripts in the ECM2:Supp, 10–18. (These lists are the same between the ECM1 and ECM2.) Witness 1890 is listed as Byzantine outside of James and 1 Peter.

76 Witness 2495, for example, was not collated outside of James for the ECM.

77 See Jas 5.12/56–64; 5.20/20–28; 2 Pet 1.12/2–4; 2.17/10–18. At Jas 5.2/26–28, the editors have

stemma surprising is just how much of that influence the Harklean Group appears to have escaped.

The global stemma, however, still appears at odds with Wachtel's conclusion about the Byzantine text in one respect. In his reconstruction, the mature Byzantine text of the ninth-century is the result of a long process that includes the text translated by Thomas in the seventh-century and now attested in Greek by the Harklean Group. Although Wachtel does argue for a second ancestral source besides the Harklean, we might still wonder why the Harklean Group does not appear as ancestral to many Byzantine witnesses in the CBGM. Currently, not one of the ECM's "pure" Byzantine witnesses even registers as a potential descendant of 1611, the head of the Harklean Group. Moreover, none of the Harklean witnesses are potential ancestors for 35 which means they will not be stemmatic ancestors for it.

This requires further explanation. How can the Harklean text in the Catholic Epistles be a precursor to the mature Byzantine text when the main witnesses to these texts show the opposite relationship? The answer remains one of definition. As noted, in Wachtel's original study he defined the Byzantine text specifically as those places where the majority of manuscripts agree against the "original" (i.e., NA27).[78] The ECM follows the same definition in the introduction and gives lists of "Byzantine readings" in the supplementary volume.[79] Of course, neither the CBGM's textual flow diagrams nor the global stemma presented here are based on this limitation. Instead they take nearly all readings into account and relate entire witnesses.

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reversed their decision from $d \rightarrow a$ in the first version of the CBGM. This variant was designated with a bold dot in the ECM1.

78 Wachtel, *Der Byzantinische Text*, 7–8. The justification for this definition is that "original Byzantine readings" always occur at places with little substantial variation. As such they do little more to characterize the Byzantine text than places with no variation do (p. 7 n. 10). However, given the reevaluation of the Byzantine text for the ECM2, there are now clear cases where this is no longer true (e.g., 1 Pet 4.16/24–28).

79 From the introduction: "The term *Byzantine* or *Koine text* refers to the form of text defined by those readings which are attested by the majority of the manuscripts *and* differ from the established text." It goes on to note that "the *Majority text* is strictly a quantitative term, and the term *Byzantine text* refers to a stage in the history of the text" (ECM2, 22*; emphasis original). Because the Byzantine text is defined in relation to the initial text, the lists have changed from the ECM1 to the ECM2. In the former, there were 213 such readings whereas the latter lists 206.

TABLE 17 *The relationship between 1611 and 35 in all places where the ECM defines a Byzantine variant*

Relationship	James	1 Peter	2 Peter	1 John	2 John	3 John	Jude	Totals
1611 ← 35	2	1	2	1	1	0	0	7
1611 → 35	24	9	2	16	4	1	6	62
No Rel.	3	1	0	2	1	1	2	10
Unclear Rel.	1	7	6	3	0	2	3	22
TOTALS	**30**	**18**	**10**	**22**	**6**	**4**	**11**	**101**

2.3.2 Using "Texts"

We can illustrate the difference such delimitation makes by comparing the text of 35 and 1611 only in those variation units where the ECM lists a Byzantine variant. The ECM2 gives 206 such places, claiming that research on the Byzantine text "must proceed primarily from the following list of readings."[80] If the CBGM data are to be consistent with Wachtel's conclusion about the development of the Byzantine text, we should expect 1611 to share some of these readings with 35 but not all. In places where 1611 does not share the Byzantine variant, we should expect 1611 to attest a reading prior to 35 rather than a reading posterior to 35. The results are shown in Table 17.

Out of a total of 206 Byzantine readings in the ECM2, there are 101 where 1611 and 35 disagree with each other. In all but one of these (Jas 3.4/32–42), it is 35 that attests the Byzantine reading. In the other 105 places, the two witnesses share the Byzantine reading. In thirty-two cases, the relationship is not clear and in the remaining sixty-nine cases there is a clear predominance of priority in the reading of 1611. In sixty-two cases, 1611 has a reading prior to 35 and in only seven cases is the reverse true.[81]

These results show that where 1611 and 35 disagree within the Byzantine text as it is defined against the initial text, 1611 has the prior reading in almost 90 percent of cases. That 35 has a preponderance of Byzantine variants is not surprising given that 35 is used to determine Byzantine readings in the first place.[82] But that 1611 has the prior reading in such a preponderance of

80 ECM2:Supp, 10.

81 Significantly, four of these latter cases are ones where 1611 disagrees with the Harklean Syriac, i.e., they are places where 1611 has probably not preserved the text of Thomas's seventh-century *Vorlage*. See n. 77 above.

82 Other witnesses used for determining the Byzantine text include 1, 18, 319, 365, 398, 424,

cases is significant since it supports Wachtel's thesis about the relationship of the Harklean text and the Byzantine text as he defined it. In short, when using Wachtel's own definition, the relationship of 1611 and 35 in the CBGM fits completely.

But this still does not explain how the Harklean Group witnesses *as witnesses* sit below Byzantine witnesses. To find the reason for that, we must look to the overall amount of their secondary readings in the CBGM. If we compare 35 and 1611 to the initial text, we see that 35 agrees with it at 91.1 percent whereas 1611 agrees at only 88.4 percent. Thus, 1611 differs from the initial text more than 35. Just as important, the readings that the ECM defines as Byzantine are fewer than comparably defined readings of the Harklean Group. We can illustrate this in 1John. To do that, we need to define a "Harklean text" that matches Wachtel's definition for the "Byzantine text." Since Aland's family 2138 is the core of the Harklean Group and the closest to the Harklean Syriac itself, we can use this as our defining group. There are three members of the family (1505, 1611, 2138) which were collated in all the Catholic Epistles.[83] Wherever two of these three agree against the initial text, these can be designated as "Harklean readings" akin to the ECM's "Byzantine readings."

In 1John there are a total of sixty-eight such Harklean readings. These are listed in Appendix B. This compares to only forty-three Byzantine readings in the same book.[84] In other words, defined as a set of particular readings, the Byzantine text is smaller than the Harklean text. The significance of this difference is that these are all cases where the respective texts differ, by definition, from the initial text. That means that our Harklean text has more secondary readings in relation to the initial text than does the Byzantine text. What's more, the relationship between 1611 and 35 within the Harklean text itself is the complete reverse of their relationship within the Byzantine text. The results are shown in Table 18 which compares 1611 and 35 in 1John in both the Byzantine text and the Harklean text.

This comparison shows that the relationship of 1611 and 35 flips depending on whether they are compared in the Byzantine text or in the Harklean text. In the former, 35, as a pure Byzantine witness is clearly descendant from the text in 1611. But in the latter, 35 is just as clearly ancestral to 1611. The reason for this is found in the readings that are *left out* of the definitions of our two compared texts: initial readings. Where the comparison is made in the Byzantine text, 35

431, 468, 607, 617, 1175, 2423. Not all of these are used for each book of the Catholic Epistles, but 35 is. See ECM2:Supp, 10–17.

83 Since 2495 is thought to be copied from 1505 it was not included in the ECM beyond James.

84 ECM2:Supp, 15–16.

TABLE 18 *The relationship of 1611 and 35 in the Harklean text and the Byzantine text of 1 John*

Relationship	In the Byzantine text	In the Harklean text
1611 = 35	21	31
1611 ← 35	1	31
1611 → 35	16	0
No Rel.	2	2
Unclear Rel.	3	4
TOTALS	**43**	**68**

TABLE 19 *A direct comparison in 1 John of the Byzantine text and the Harklean text as defined*

Relationship	1 John
Byz Text = Hk Text	21
Byz Text ← Hk Text	0
Byz Text → Hk Text	1
No Rel.	3
Unclear Rel.	0
TOTALS	**25**

loses nearly all its initial text readings whereas 1611 keeps them. The reverse is true with 1611 in the Harklean text. Where 35 and 1611 disagree in the Byzantine text, 1611 agrees with the initial text and where they disagree in the Harklean text, 35 agrees with the initial text. The only exception is at 1 John 3.14/35 where neither witness has the initial text and 35 has the prior reading (τὸν ἀδελφόν → τὸν ἀδελφὸν αὐτοῦ).[85] If we compare the Byzantine text and the Harklean text directly to each other in 1 John, we find that they have almost no directed genealogical relationship (see Table 19).

In most cases the two textual entities agree. Where they disagree, the Byzantine text has the prior reading once (1 John 3.14/35) and the Harklean never

85 The Harklean Syriac agrees with our Harklean text at this point.

does. In three places, the Harklean text has no direct relationship with the Byzantine text (1John 2.27/18–22; 4.2/6, 4.19/5). Thus there is little, in CBGM terms, to determine which direction the shared readings travelled. Of course, if these two "texts" are dated with the date at which they are first attested (either the minuscules of the ninth-century or the Harklean Syriac in the seventh), then the direction is obviously one in which the Harklean text is the precursor to the Byzantine text. This was essentially the assumption made by Wachtel in his original study. He assumed that agreements between the Harklean Syriac and the Byzantine text demonstrated the latter as a descendant of the former even though, in CBGM terms, agreement does not indicate the direction of relationship.[86] In light of the results here, it may be best to explain the relationship as one of shared ancestry rather than direct ancestry. The shared agreements between the Harklean text and the Byzantine text form should not necessarily be taken as evidence that the Harklean text is ancestral to the Byzantine text but rather that the two have a common, shared ancestor. The differences show that the Harklean has diverged further from this shared ancestor in 1John than the Byzantine text has.[87]

This minor revision to Wachtel's original thesis does not challenge his larger argument about the gradual development of the Byzantine text. Nor is there reason from the global stemma to conclude that the CBGM has misplaced the Byzantine witnesses in relation to the Harklean Group witnesses. Instead we see a complex set of relationships attesting to the fact that the Harklean Group coheres well within itself and does not primarily descend from the Byzantine text. Closer inspection suggests that the Harklean Group descends from the same stock as the Byzantine text but the latter has not strayed as far from it as the Harklean has. In this way, we can see that Jongkind and Wachtel are both right and both wrong. Jongkind is right that a higher preponderance of initial readings does not necessarily mean an earlier text. In this case, the earlier Harklean text has nevertheless strayed further from the initial text than has the Byzantine text. But he is wrong that this situation causes a problem

86 Importantly, the only clearly defined *text form* in Wachtel's study is the Byzantine. Thus this text form is never compared to any other similarly defined entity. Rather it is compared to manuscripts, fathers, and versions. Byzantine readings found in these other witnesses do not challenge the status of the Byzantine text form since it is defined not by the unique readings but rather by the *frequency of specific types* of readings. See Wachtel, *Der Byzantinische Text*, 76, 87.

87 This picture fits quite well with Zuntz's "stream of the tradition" printed at the back of his *Text of the Epistles*. There the Byzantine text is later in time than the Harklean Syriac but the latter has diverged from the main stream of which the Byzantine is still a part.

for the CBGM. At least in this case, the method does not wrongly place the Harklean as a descendant of the Byzantine but rather suggests that they have a shared ancestor. In other words, the problem of a "false proxy" is not actually a problem here. On the other hand, it does not appear that the Harklean text is a direct ancestor to the Byzantine text as Wachtel has suggested. Instead, the evidence above suggests that the two share a similar ancestor which accounts for their agreements. Nevertheless, the Harklean has strayed further from that ancestor than has the Byzantine despite the earlier date of the former. In this way, Wachtel is right to see the Harklean as providing us with a seventh-century window on the development of the Byzantine. It is simply that this window is less direct than Wachtel originally thought.

3 Implications

The preceding discussion has dealt with a number of objections to the CBGM as it relates to the history of the text. In addressing these, we have shown not only that the method can be profitably used for answering such questions but we have also given an extended example of how to go about it. It remains now to bring this part of our investigation to a close by drawing out several important implications for future such uses.

First, textual flow diagrams should not be used for the purpose of studying the text's overall development. Their simplicity can have a mesmerizing effect. But their clarity can become a hindrance to their proper use when it tempts one to make more of the distinct relationships than is appropriate. Most importantly, they should not be treated as stemmata. David Parker makes this mistake in his discussion of the textual flow diagram for James when he reads it as giving us "the most probable manuscript relationships" and refers to it as a "stemma."[88] He speaks of twelve witnesses as all being "in an equal relationship to the Initial Text," a description which ignores not only their actual pre-genealogical coherence with the initial text, but also the important differences in construction (and so in the resulting shape) between textual flow diagrams and the global stemma.

The problem with using textual flow diagrams for studying witness relationships is that they use only a small amount of the actual genealogical data in the CBGM. They are thus too abridged for work beyond particular variants. As Parker rightly judges in another place, they are more like the map of the Lon-

88 Parker, *Introduction*, 307.

don Underground which "may exaggerate or diminish the distance between items."[89] The problem stems especially from the fact that textual flow diagrams only allow one potential ancestor per witness. Because of this, a witness's overall position in the "flow" has as much or more to do with its ancestor's ancestors than with its own immediate ancestor. In other words, it is not unusual for a witness to have more text in common with a great-grandparent than with a grandparent. Witness 2138, for example, actually shares slightly more readings in common with the initial text than it does with 35 even though 2138 is separated from the initial text by multiple intermediaries in textual flow diagrams, one of which is 35 itself. This is a major reason why they should not be used for studying the genealogical relationships of entire witnesses. As Wachtel says, "Textflow diagrams must not be confused with stemmata."[90] Instead, their use should be restricted to their original design: studying the level of coherence at particular points of variation. For this purpose, the diagrams are well suited because they show where witnesses disagree within a variation. Beyond that, their oversimplification makes them unsuitable for answering specific historical questions. Unfortunately, the lack of a global stemma means that the editors have sometimes used them beyond their means in trying to explain the method to those outside of Münster. For example, Wachtel has referred to them as being stemmata or "stemma-like," saying that they represent "strands of transmission."[91] This despite elsewhere warning against confusing them with stemmata (see above). Strutwolf has similarly promised too much for them when he says they give us certain knowledge of "the textual character of the ancestors the scribe was probably copying."[92] Hopefully, the present study offers an example of how one can avoid these abuses of textual flow diagrams while still using the CBGM to answer historical questions.

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89 David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 98.

90 Wachtel, "Coherence Method and History," 6.

91 See Klaus Wachtel, "Towards a Redefinition of External Criteria: The Role of Coherence in Assessing the Origin of Variants," in *Textual Variation: Theological and Social Tendencies? Papers from the Fifth Birmingham Colloquium on the Textual Criticism of the New Testament*, ed. David C. Parker and H.A.G. Houghton, Texts and Studies Third Series 6 (Piscataway, NJ: Gorgias, 2008), 116, 124 and cf. n. 66 above.

92 Holger Strutwolf, "Scribal Practices and the Transmission of Biblical Texts: New Insights from the Coherence-Based Genealogical Method," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 147–148.

Second, in contrast to the predominant textual flow diagrams, the global stemma provides a much more discriminating view. Witnesses are related to multiple ancestors rather than to just one and are related specifically to those exerting the strongest and most important influence. The global stemma is based on and reflects far more data than the textual flow diagrams. This is why a witness like 35 can be ancestral to the entire Harklean Group in the textual flow diagrams while showing little influence on that same group in the global stemma. As such, the global stemma is the appropriate place for studying historical relationships. In the case of the Harklean Group, it shows what we expect of eleventh-century or later manuscripts that largely preserve a seventh-century text: Byzantine witnesses have influenced them but only to a minor degree. They are thus careful medieval copies of a text reaching back centuries earlier.

Third, Jongkind's concern that the CBGM wrongly assumes that more posterior readings mean a later text is correct in principle. His scenarios show how this assumption can lead the CBGM astray in relating texts to each other. Fortunately, the CBGM can be informed by genealogical data however acquired so that any known relationships can be taken into account. The local stemmata and the substemmata allow for editorial intervention for just this reason. That said, the interest in the CBGM, as in all genealogical methods, is whether it can help us know what we otherwise would not know. In this case, Jongkind's scenarios bring to the fore possible cases where the method's fundamental principle of building a genealogy of witnesses on the genealogies of their readings fails. As this chapter has illustrated, he is correct to say that the interplay between these two is "complicated."[93] However, it is important to recognize that the CBGM handles this complexity in different ways. The textual flow diagrams oversimplify the complexity to serve their stated purpose. The global stemma, however, allows for far more complexity and it is here that the CBGM holds the most promise of avoiding the problem.

Fourth, this chapter raises questions about the claim of the CBGM to solve the problem of contamination. Mink has spoken of the CBGM "coping" with contamination and "tracing the ways of contamination" and determining the "sources of contamination" and that an adequate method "has to be able to deal with contamination."[94] More optimistically, Parker has said that the CBGM "sets out to solve the hitherto fatal problem of contamination" and that upon

93 Jongkind, "Nature and Limitations," 17.

94 These quotes are from Mink, "Contamination, Coherence, and Coincidence," 149, 150; idem, "Introductory Presentation," 54.

first seeing the method explained "it was at once evident that the problem of contamination was a problem no longer."[95] Wachtel, however, clarifies that these claims should be made only in reference to the CBGM's decision to relate texts rather than manuscripts. He says of the 2008 colloquium on the CBGM that "Mink surprised the audience with the remark that his method does not address the problems [of contamination] as they were pointed out by [Michael] Holmes … Indeed, CBGM has no remedy to offer against contamination if the aim is the reconstruction of the manuscript tradition *more geometrico*."[96] Instead, the CBGM works with witnesses and "indicates where contamination occurred."[97] But even given this necessary qualification, Jongkind's scenarios show that there are still cases where the CBGM will be helpless to "indicate where contamination occurred." The method should thus not be praised as having "solved" the problem of contamination even if it may help us work in the midst of it in many cases.

Finally, the most important question raised by the present chapter is the question of how we should delineate the "texts" we compare. It is too easy to forget that the relationships we find between texts can change, sometimes dramatically, depending on how we define those texts in the first place. In the case of the Byzantine text, we saw that when witness 35 and witness 1611 are compared at all points of variation in the CBGM, then 35 has more prior readings than 1611. This created a conflict with the conclusion that 1611, as a key member of the Harklean Group, has a text at least as early as the seventh-century. But when the two witnesses were compared only in the distinctively Byzantine readings, 1611 emerged as a clear ancestor with far more prior readings. This raises the question of whether the CBGM ought to be comparing (or, at least, only comparing) the complete texts of manuscripts to each other. In the case of the Byzantine text form, the ECM itself says that only a selection of readings found in Byzantine manuscripts is primarily relevant for its study. Should not the same distinction be applied throughout the CBGM when we want to understand the genealogy of other "texts"? This question is fundamental to all genealogical methods and is one that absolutely cannot be avoided. Users of computer-assisted methods—the CBGM included—must justify their decisions about what is being compared and why. The consequences of such

95 Parker, *Textual Scholarship*, 91, 84. Compare similar comments in Parker, *Introduction*, 169.

96 Klaus Wachtel, "Conclusions," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 222. The reference to Holmes is to his essay in the same volume.

97 Wachtel, "Conclusions," 222.

decisions are too important to assume. As this chapter illustrated, completely opposite results can develop depending on how "texts" are delineated.

4 Conclusion

One of the stated aims of the CBGM is to help improve our understanding of the textual history of the New Testament by producing a comprehensive hypothesis about the text's genealogical structure. Yet this claim remains controversial not least because it is not always clear what the CBGM's genealogies relate. The present chapter has surveyed the challenges for the CBGM on this point. Some of the objections are based on misunderstanding or unjustified assumptions about what constitutes history. But particular attention was given to the claim of Jongkind that the CBGM wrongly assumes that variant relationships will reveal witness relationships. To consider the problem in more detail, we gave particular attention to the Harklean Group of Greek witnesses because of the known provenance of their text. This chapter has demonstrated that the placement of the Harklean Group in relation to the mature Byzantine text does not create a problem for the CBGM. In fact, the CBGM has clarified their precise relationship even as it has alerted us to the importance of how we define them. This question of definition deserves careful attention from all who are interested in the text's historical development. In any case, the present chapter has shown that the CBGM can be useful for answering historical questions and has given one example of how that can be done. Although there may be cases where the CBGM gives false results, we agree with Jongkind that "in many cases the relationship between witnesses that is found using this tool will be real."[98]

98 Jongkind, "Nature and Limitations," 16.

CHAPTER 6

The Selection of Variants in the CBGM

The previous chapter illustrated the importance of clearly defining the entities our textual genealogies relate. One scholar may find an exactly opposite relationship to another scholar because they have defined their texts differently. The present chapter considers a closely related issue. Once we have delineated the outer boundaries of our texts for comparison, which variants within those boundaries should be used for determining their relationship? Are all variants genealogically significant and are they all equally so? If not, how can we determine such significance? Like other genealogical methods, the CBGM makes some distinction between variants that are genealogically significant and those that are not. But unlike other methods, these distinctions operate on multiple levels. The present chapter will seek to put these differences in the context of previous studies before turning to particular types of variants that either present particular difficulties or that expose inconsistency on the part of the CBGM. Along the way, we offer suggestions for how to improve the method's current practice.

1 Previous Study

At the foundation of Lachmannian stemmatics is the study of those variants known as "indicative" or "peculiar" errors.[1] The key is that these errors cannot be the type that are easily corrected or easy to make more than once. So long as these qualifications do not apply, the principle holds that shared error implies shared ancestry. Relative to the total number of variants, such indicative errors are generally believed to be quite small. In one modern application, for instance, the number was taken to be only 1 percent of the total variants collected.[2] With the rise of computer-assisted stemmatics, the attempt

1 Paul Maas, *Textual Criticism*, trans. Barbara Flower (Oxford: Clarendon Press, 1958), § 6; Paolo Trovato, *Everything You Always Wanted to Know about Lachmann's Method: A Non-Standard Handbook of Genealogical Textual Criticism in the Age of Post-Structuralism, Cladistics, and Copy-Text*, Storie e linguaggi (Padova: Libreriauniversitaria.it, 2014), 54–56.

2 Benjamin Salemans, "The Old Text-Genealogical Method of Lachmann Updated with the Help of Cladistics," in *I nuovi orizzonti della filologia: Ecdotica, critica testuale, editoria scien-*

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to divine which variants are genealogically significant has taken on new significance given how quickly computers can process large datasets and how precisely they can analyze them. But so far agreement has evaded scholars working in the field. Peter Robinson, a major pioneer in computer stemmatics, has acknowledged that on this matter "there are no easy answers."[3] Robinson himself advocates an expansive model that includes as much data as possible. The hope is that including more data will protect against poor human judgment. Thus he says, "We can have confidence in this because our analysis does not rest on only these one or two variants ('indicative' as they might be), but on patterns within the whole mass of variation. We may be wrong sometimes about the classification of particular variants, but the great majority of times, we will be right." Any false positives included will hopefully be "outweighed by the mass of variation derived by descent with modification from copy to copy."[4]

Robinson himself recognizes that his view is controversial. Those who disagree argue that only a small subset of variants is genealogically significant. One such scholar is Benjamin Salemans whose dissertation has played a seminal role in raising interest in computer-assisted stemmatics.[5] In his opinion, "a scientifically necessary justification for the use of all the variants as building blocks for historical trees has not been presented in inductive stemmatology."[6] Disconcertingly, he reports that his own doctoral work was stalled by ten years because of the need to provide a justification for his own selection of variants.[7]

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tifica e mezzi informatici elettronici: Roma, 27–29 maggio 1998 (Rome: Accademia Nazionale dei Lincei, 1999), 118.

3 Peter Robinson, "Four Rules for the Application of Phylogenetics in the Analysis of Textual Traditions," *Digital Scholarship in the Humanities* 31, no. 3 (2016): 647.

4 Ibid., 649. Opposite this view is that of Bengt Alexanderson who advocates that all agreements that "*can* be coincidental … *must* be counted as such" in *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method* (*CBGM*) *and the Editio Critica Maior* (*ECM*), Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014), 62. Within the ECM this would leave almost nothing left.

5 Benjamin Salemans, "Building Stemmas with the Computer in a Cladistic, Neo-Lachmannian, Way: The Case of Fourteen Text Versions of Lanseloet van Denemerken" (Ph.D. diss., Nijmegen University, 2000).

6 Benjamin Salemans, "The Remarkable Struggle of Textual Criticism and Text-Genealogy to Become Truly Scientific," in *Text Comparison and Digital Creativity: The Production of Presence and Meaning in Digital Textual Scholarship*, ed. Wido van Peursen, Ernst D. Thoutenhoofd, and Adriaan van der Weel, Scholarly Communication (Leiden: Brill, 2010), 117.

7 Ibid., 118.

The result was the identification of eleven characteristics of genealogically significant variants.[8]

Not all of Salemans's characteristics apply to the New Testament in general or to the CBGM in particular, however. Some are stated relative to variant units rather than variant readings, some are based on the Lachmannian principle which is not directly relevant to the CBGM, and still others are specific to poetic texts. Other categories are already excluded by the CBGM such as spelling differences and nonsense readings (discussed below). The remaining categories of excluded variants that could apply to the CBGM are (1) inflectional differences; (2) differences determined by dialect or region; (3) differences involving the placement of adverbs; (4) differences involving adjectives; and (5) differences involving small words. Textual additions are included by Salemans so long as they fit the context well. The justification for this is that such additions are not likely to be subsequently omitted. By the same logic, omissions that do not harm the sense are also included. Omissions and additions which do not meet these criteria are excluded. Others have formulated similar lists. In her study of the medieval French poem *Cligès*, Margot van Mulken excluded variants involving word order, meter and prosody, pronouns, prepositions, particles, prefixes, and tense and mood.[9] But, like many others, van Mulken is quick to admit that "deciding whether or not a variant has kinship-revealing qualities is, of course, a very precarious matter."[10]

The problem, of course, is that, in order to know exactly which variants are non-genealogical, we must already know the relationships of the texts in question. But that is precisely what we need the variants to help us determine! In Salemans's case, he does compare his excluded agreements with his initial stemma to see how well they fit, but this is still a comparison with his own hypothesis. As he admits, "The evaluation of the text-genealogical characteristics, which have the status of hypotheses, did not *prove* without a doubt that they are correct."[11] Without some external means of establishing the stemma,

8 Salemans, "Building Stemmas," 90–102; idem, "Remarkable Struggle," 120–121; idem, "Cladistics or the Resurrection of the Method of Lachmann: On Building the Stemma of Yvain," in *Studies in Stemmatology*, ed. Pieter van Reenen and Margot van Mulken (Philadelphia: John Benjamins, 1996), 29–32.

9 Margot van Mulken, "The Manuscript Tradition of the *Cligès* of Chrétien de Troyes: A Stemmatological Approach," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 114.

10 See Margot van Mulken, "The Manuscript Tradition of the Perceval of Chrétien de Troyes: A Stemmatological and Dialectological Approach" (Ph.D. diss., Vrije Universiteit, 1993), 25–38; the quote is found on p. 25.

11 Salemans, "Building Stemmas," 297; emphasis original.

his "characteristics" remain provisional. What is needed is a textual relationship that we know by means other than the variant readings involved.

Fortunately, Ulrich Schmid has identified such a case, albeit a modern one, and the results are instructive.[12] The texts involved are (1) two Latin Gospel manuscripts, (2) a mistake-ridden nineteenth-century edition of one of them, and (3) a series of earlier Gospel sources in various languages. The two Latin manuscripts are the sixth-century Codex Fuldensis (Fulda, Landesbibliothek, Bonifatianus 1) and the ninth-century Codex Cassellanus (Kassel, Landesbibliothek, MS Theol. 31), both of which preserve Latin Gospel harmonies. The relationship between them has been of special interest because of their potential relationship to Tatian's Diatessaron.[13] The relevant nineteenth-century edition is an edition of Codex Cassellanus produced in 1869 by Christian Grein.[14] The earlier Gospel sources mentioned include ancient Greek manuscripts and versions collated in the twentieth-century against Grein's edition by Heinrich J. Vogels.[15] Unfortunately for Vogels, Grein's edition frequently misrepresents Cassellanus so that some of what Vogels took to be genealogically significant agreements are, in fact, coincidental, the result of Grein's editing, not Cassellanus's ancestry. To explain the full significance of these relationships, we need to look at them in greater detail.

In the early twentieth-century, Vogels produced a study of Latin Gospel harmonies in which he argued that Codex Cassellanus was not descended from Codex Fuldensis but rather from an earlier, independent source. The argument was based on forty-four places where Cassellanus agreed with various early sources *against* Fuldensis. The aim was to show, in classic Lachmannian fashion, that this shared agreement implied shared ancestry. Unfortunately, Vogels did not actually use Codex Cassellanus but rather Grein's error-ridden edition. In his spot-check of just nine pages, Schmid found twenty-five errors in Grein's edition. Some are trivial matters of punctuation and spelling (e.g., "VIII" for "octo") but others are more significant. Relevant here are the places where Vogels thought that he had found agreements between Cassellanus and other, earlier Gospel sources when, in fact, he had only identified agreements

12 Ulrich Schmid, "Genealogy by Chance! On the Significance of Accidental Variation," in *Studies in Stemmatology II*, ed. P. van Reenen, A. den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 127–143.

13 The debate is discussed in Schmid "Genealogy by Chance," 129–131.

14 C.W.M. Grein, *Die Quellen des Heliand: Nebst einem Anhang: Tatians Evangelienharmonie herausgegeben nach dem Codex Cassellanus* (Cassel: Theodor Kay, 1869), 127–262.

15 Listed in Heinrich J. Vogels, *Beiträge zur Geschichte des Diatessaron im Abendland*, Neutestamentliche Abhandlungen 8.1 (Münster: Aschendorff, 1919), 128–129.

between a nineteenth-century edition of Cassellanus and these other sources. Schmid found that twenty-four of Vogels's forty-four examples are of this type. Since Grein surely did not consult Vogels's early sources, they constitute coincidental agreements between Vogels's early sources and Grein's edition. In Schmid's terms, they constitute genealogy by chance. The known genealogy of these texts allows for a useful study in the types of variants that agree only by coincidence.

Having recorded a selection of these false agreements, Schmid considers how they fit with Salemans's categories of genealogically insignificant variants. Most of them (almost 90 percent) are covered by his categories. But the remaining 10 percent or so include omissions and additions of single words and even the addition of an entire sentence. As Schmid says, this means that the issue of coincidental agreement is "more complicated than hitherto thought of."[16] The problem is more significant when we consider that Schmid's sample from Grein's edition covered just nine pages.

Schmid offers two concluding observations which are worth giving here. First, he points out the obvious inadequacy of Vogels's original comparison. Vogels had treated an agreement with Cassellanus and *any* member of his disparate group of early witnesses as significant. No consideration was given for Cassellanus's overall agreement with any individual member of this comparanda.[17] A look at his forty-four agreements shows that Cassellanus sometimes agrees with one member of the group and sometimes another. The shortcomings of such a method should be obvious. No doubt one could pick a completely random set of twenty or so witnesses and find that at least one member always agrees with Cassellanus. But such agreement would be worthless unless those twenty witnesses had some known relationship among themselves. With regard to Vogels, Schmid rightly concludes that this is not a safe way to determine genealogy, especially in a textual tradition as robust as the Gospels. This is yet another example of an issue discussed in the previous chapter, that of properly defining compared textual entities.

Second, and of direct relevance here, Schmid concludes that Salemans's categories are not secure. He notes that a more extensive look at Grein's edition could turn up additional types of coincidental agreement that Salemans thought were secure. Likewise, he notes that finding some instances of one type of coincidental agreement does not mean that all agreements of that same type

16 Schmid, "Genealogy by Chance," 138.

17 In this, Vogels's method resembles Wachtel's use of his "special material" (*Sondergut*) mentioned in the last chapter.

are likewise suspect. Schmid suggests that we may have to content ourselves with the reality that we cannot secure a certain typology of coincidental agreements. Such typologies are useful, but, according to Schmid, they should not be used to "eliminate data without proper evaluation of their statistical inclination towards parallelism [i.e., coincidental agreement] in a given text tradition."[18] We can now consider how the CBGM proposes that such evaluation be done.

2 The CBGM's Basic Principle

The CBGM currently makes several distinctions that determine which variants are incorporated into the method. The most important of these is the distinction made (following the ECM) between "readings" and "variants," the latter being a subset of the former.[19] A "reading" is any difference between two witnesses at the same point of comparison. A "variant" is more restrictive. As Mink explains, "For every textual tradition it is necessary to determine—in accordance with language, historical period and literary genre—which readings are to rank as genuine variants. Only variants are the basis of a genealogical relationship of witnesses."[20] A "variant" is more restrictive as it excludes spelling differences and, as discussed below, most nonsense readings. As with the ECM, a reading is considered to be nonsense if it makes neither logical nor grammatical sense. Where the CBGM goes further than the ECM is in its further exclusion of corrections.[21]

Putting all this together, the CBGM's genealogies are based on all meaningful, non-spelling differences of the first hand from the collated, continuous text manuscripts. Among these, it makes no distinction as to the weight of any particular agreement relative to any other. Agreement in an article counts the same

18 Ibid., 141.

19 See ECM2, 26*.

20 Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 29.

21 Ibid., 28–29; Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 143; idem, "Guide to 'Genealogical Queries' (Version 2.0)" (Münster: INTF, 2013), § 5, http://intf.uni-muenster.de/cbgm2/guide_en.html.

as agreement in an added phrase. This decision is justified on the ground that "the genealogical correlation of a manuscript text should be explored on the basis of *all* of its variants [as defined above]. For a scribe, there were no 'significant' or 'insignificant' variants in terms of the textual history as studied by modern text critics."[22] Thus the CBGM initially works with a binary of "readings" and "variants" where the latter are all initially weighted equally. The qualification that the CBGM "initially" weighs all agreements equally is important because, in later stages of the method, notably in the construction of optimal substemma, the nature of the variation is taken into account. At this stage, a variant initially used for determining witness relationships may now be discarded in light of the combination of genealogical and philological evidence. As we saw earlier, a variant is genealogically significant or "connective" if (1) "the witnesses generally agree to such a degree that a coincidental match can be excluded" or if (2) "the variant is too extraordinary to have emerged repeatedly."[23]

We have discussed the precedent for the first principle already. What is new in the CBGM is the amount of data to which it may be applied. Whereas Gordon Fee had said that "at the highest level of manuscript relationships (over 90 percent agreement in total variations) all variants take on genetic significance,"[24] the CBGM regularly shows agreement levels above this rate.[25] The average agreement between all compared pairs of witnesses is 87.6 percent and the lowest agreement between any pair is still 77.9 percent.[26] Given these numbers, Fee's percentage should be adjusted perhaps to something more like 95 percent. But no such percentage should be used mechanically and that

22 Mink, "Contamination, Coherence, and Coincidence," 145.

23 Ibid., 143.

24 Gordon D. Fee, "On the Types, Classification, and Presentation of Textual Variation," in *Studies in the Theory and Method of New Testament Textual Criticism*, SD 45 (Grand Rapids: Eerdmans, 1993), 68. The paper was originally given at SBL in 1974.

25 In Fee's own quantitative studies there are only a few cases where manuscript agreements reach 90 percent. See Gordon D. Fee, "The Significance of Papyrus Bodmer II and Papyrus Bodmer XIV–XV for Methodology in New Testament Textual Criticism" (Ph.D. diss., University of Southern California, 1966), 86–88, 197, 204; idem, "Codex Sinaiticus in the Gospel of John: A Contribution to the Methodology in Establishing Textual Relationships," in *Studies in the Theory and Method of New Testament Textual Criticism*, SD 45 (Grand Rapids: Eerdmans, 1993), 228, 233–234, 236; idem, "P^{75}, P^{66}, and Origen: The Myth of an Early Textual Recension in Alexandria," in *Studies in the Theory and Method of New Testament Textual Criticism*, ed. Eldon J. Epp and Gordon D. Fee, SD 45 (Grand Rapids: Eerdmans, 1993), 252.

26 Mink, "Contamination, Coherence, and Coincidence," 157 n. 25.

brings us to Mink's second criterion, that certain types of variation may still be connective even when shared by witnesses without high levels of agreement. Here again, the CBGM requires more of the text critic rather than less in terms of philological skill and experience.

If the first of Mink's principles holds, the question remains as to what should be counted in order to determine witness agreement. Fee argued that "the vast majority of variants fall into the category of textual trivia" and that "genetic relationships must ultimately be built on firmer ground than on agreements, for example, in the addition/omission of articles, possessives, conjunctions, or the tense change of verbs (usually), or certain kinds of word order, or in many instances of harmonization."[27] This is in some tension with Fee's own study on Codex Sinaiticus in John where he explicitly distinguishes his method from that of Colwell and Tune by initially counting all but spelling differences and only weighing them later.[28] Although he does not draw out the implications, he also mentions that there was "significant correlation" between overall agreement and agreement in "significant readings."[29] Such a procedure essentially matches that of the CBGM. The level of agreement between two witnesses (pre-genealogical coherence) is taken into account when considering the connectivity of individual readings shared between them.

Interestingly, in one of the few cases where the CBGM has been applied outside the New Testament, pre-genealogical coherence was adjusted to both weigh and count agreements. Alberto Cantera has produced a version of the CBGM to work with the Avestan tradition in which "'variants' that are 'grammatically correct and logically possible' are not frequent."[30] For this reason, Cantera loosened the CBGM's definition of "variant" to include any reading that *might* reveal genealogy. He made the further step of distinguishing: (1) frequent variations of single letters; (2) haplography, dittography, metathesis, and accumulations of the first type; and (3) "aberrant variants that are quite unlikely to arise independently."[31] He then compared witnesses word-by-word and placed their differences in one of these three categories. Cantera is thus able to compare his witnesses both with and without these categories and, in

27 Fee, "Types of Textual Variation," 67. A similar list is given by Bruce M. Metzger in "The Caesarean Text of the Gospels," *JBL* 64, no. 4 (1945): 489.

28 Fee, "Codex Sinaiticus in the Gospel of John," 226.

29 Ibid.

30 Alberto Cantera, "Building Trees: Genealogical Relations between the Manuscripts of Wīdēwdād," in *The Transmission of the Avesta*, ed. Alberto Cantera, Iranica 20 (Wiesbaden: Harrassowitz, 2012), 329.

31 Ibid.

this way, his application of the CBGM applies a greater degree of granularity to pre-genealogical coherence.

While Cantera's three categories would not map well onto the New Testament, his process is promising. It would be useful in future versions of the CBGM to include such a typology because, while we may agree with Mink that scribes did not distinguish between genealogically significant variants when copying, it does not follow that *we* should not do so. After all, scribes also did not copy in verses or variation units, but that has not stopped scholars from fruitfully employing both categories.

3 Specific Cases

Having considered the value of categorizing agreements in the CBGM, it remains to consider specific cases that have received attention from New Testament textual critics or that raise questions for the CBGM. These include singular readings, orthographica, nonsense readings, and corrections. Each is dealt with in turn.

3.1 *Singular Readings*

The category of singular readings has been discussed at some length already but here the issue is not whether they can help us understand scribal habits. Here the issue is particularly their genealogical value (or lack thereof). In fact, they have often been rejected as having no value at all for genealogy. Sometimes this rejection is because the method employed is the Lachmannian principle of agreement in indicative error. Obviously, singular readings cannot show *shared* ancestry since they are not shared at all. Thus Colwell and Tune state categorically that "the Singular Reading is prevented by its very nature from usefulness in establishing group relationships of manuscripts."[32] In this they have been followed by Eldon Epp, Frederik Wisse, and many others.[33] But since the CBGM

32 E.C. Colwell and Ernest W. Tune, "Method in Classifying and Evaluating Variant Readings," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 104.

33 Fee, "The Significance of Papyrus Bodmer II and Papyrus Bodmer XIV–XV for Methodology in New Testament Textual Criticism," 225; W.L. Richards, *The Classification of the Greek Manuscripts of the Johannine Epistles*, SBL Dissertation Series 35 (Missoula: Scholars Press, 1977), 28, 31; Frederik Wisse, *The Profile Method for the Classification and Evaluation of Manuscript Evidence as Applied to the Continuous Greek Text of the Gospel of Luke*, SD 44 (Grand Rapids: Eerdmans, 1982), 38; Eldon J. Epp, "Toward the Clarification of the Term

is not interested in deducing genealogy merely by agreement, the rejection of singular readings does not obviously apply. With regard to the CBGM, we can consider (1) how significant the CBGM's current inclusion of these readings is and (2) whether such readings should be excluded on principle.

Exactly how significant the inclusion of such singular readings is can be seen by comparing witnesses both with and without their singular readings. If the agreement levels change dramatically, we know the issue is quite significant. In fact, David Parker suggests that the exclusion of singular readings from previous studies is one reason "why the theory of text types has been able to survive."[34] Remove these readings and the agreement between, say, 01 and 03 looks as close as the agreement among some Byzantine witnesses, Parker suggests. But include them and it becomes clear that what looked like one unified text-type now looks like two.

As it happens, 01 and 03 are good examples to illustrate the point. Both have long been thought to be from similar textual stock. In addition, 01 is well known for its many singular readings.[35] Thus, we have here a place where the decision one way or another on singular readings might be significant. As before, we will restrict ourselves to James. According to the ECM, 01 has eleven singular readings and 03 has five. Excluding these from consideration reduces the places of comparison between the two by a total of sixteen. The effect this has on their pre-genealogical coherence is shown in Table 20.

The exclusion of singular readings has no effect on which witness is the potential ancestor: 03 still has more than double the prior readings. It does, however, increases the pre-genealogical coherence by about two percentage points. Of course, both witness would also see their pre-genealogical coherence increase in relation to all other witnesses since we have now decreased the

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'Textual Variant,'" in *Studies in the Theory and Method of New Testament Textual Criticism*, SD 45 (Grand Rapids: Eerdmans, 1993), 59; J.J. Cate, "The Text of the Catholic Epistles and the Revelation in the Writings of Origen" (Ph.D. diss., New Orleans Baptist Theological Seminary, 1997), 62 n. 101; Carroll D. Osburn, *The Text of the Apostolos in Epiphanius of Salamis*, The New Testament in the Greek Fathers 6 (Atlanta: SBL, 2004), 41; Carl P. Cosaert, *The Text of the Gospels in Clement of Alexandria*, The New Testament in the Greek Fathers 9 (Atlanta: Society of Biblical Literature, 2008), 47–48, 56; Gerald J. Donker, *The Text of the Apostolos in Athanasius of Alexandria*, The New Testament in the Greek Fathers 8 (Atlanta: SBL, 2011), 41–42.

34 David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 94.

35 See Dirk Jongkind, *Scribal Habits of Codex Sinaiticus*, Texts and Studies Third Series 5 (Piscataway, NJ: Gorgias, 2007), 131–246.

TABLE 20 *A comparison of 01 and 03 both with and without singular readings*

	Points of comparison	01 = 03	01 → 03	01 ← 03	No relationship	Unclear relationship
With singular readings	747	677 (90.63%)	20	43	0	7
Without singular readings	731	677 (92.61%)	16	33	0	5

TABLE 21 *A comparison of 38 and 631 in James both with and without singular readings*

	Points of comparison	38 = 631	38 → 631	38 ← 631	No relationship	Unclear relationship
With singular readings	550	438 (79.6%)	65	37	7	6
Without singular readings	499	438 (87.8%)	41	19	2	2

number of places they *disagree* with all others. Given this, the overall effect would probably be minimal.

If we want to see the effect of this change at its most pronounced, we should compare two witnesses that have unusually high rates of singular readings. Minuscule 38 has twenty-one singular readings and minuscule 631 has thirty in James.[36] Comparing these two witnesses yields the results in Table 21.

As expected, the results here are more significant. As with 03 and 01, the predominant direction of textual flow remains the same (38 → 631). But the pre-genealogical coherence increases by almost ten percentage points. For comparison, the current closest potential ancestor to 631 is 424 which agrees at 85.9 percent of places of comparison. If we remove the singulars from 424 and 631, their agreement increases to 90.8 percent in James. Clearly, removing

36 Mink, "Contamination, Coherence, and Coincidence," 147 n. 14. Mink lists the number of singulars as twenty-eight and twenty-five, respectively. But my search using the "view differences" module in the CBGM produced the numbers shown above. My own count defines singular readings relative to the data included in the CBGM rather than the data recorded in the ECM. So, where a reading of 631 agreed with a lectionary (as it does at Jas 2.14/26b), this was still counted as a singular reading since lectionaries are not included in the CBGM. Whether this explains the discrepancy with Mink is unknown since he does not explain his numbers.

singular readings would affect all relationships, but it would not affect them all the same. Some relationships might shift noticeably (such as 38 and 631) and some might even see the direction of their predominant textual flow reversed. But the overall effect would still be minimal.

If the inclusion of singular readings in the CBGM has little overall effect, the question remains whether they should be excluded on principle. Not a few scholars have argued this for other genealogical methods. To return to Colwell and Tune, they list three reasons for excluding singular readings: (1) they tell us nothing about manuscript relationships because they only leave a manuscript unrelated to other manuscripts; (2) they inflate the relationships of other manuscripts "by making it *appear* that the others agree at a place with real differences, when this is not the case"; and (3) they have a high probability of being nothing more than scribal errors.[37]

Colwell and Tune's first two reasons are really one reason since the second is premised on the first. Only if singular readings tell us nothing about manuscripts relationships do they inflate the numbers; if they do tell us something, then leaving them out actually deflates the numbers. But the claim that they tell us nothing fails to convince. How can it be defended that a nonagreement between witnesses "tells us nothing about their relationship"? The assumption seems to be that the only meaningful relationship is one of agreement. But, of course, Colwell and Tune's entire method is premised on this not being the case. Unless two witnesses always agree, disagreement is necessarily part of their overall relationship. As such, the fact that a singular reading disagrees with all other witnesses should not disqualify it any more than a disagreement with a witness disqualifies any other reading. Disagreement is itself one aspect of any textual relationship and this is true even where the disagreement is with all other witnesses.

The main reason Colwell and Tune exclude singular readings seems to be the third one: singular readings are nothing more than scribal errors.[38] But this objection requires more specificity in order to convince. Certainly, nonsense singular readings may raise concerns insofar as they do not seem to reflect the scribe's intention (on which see below). But, at least in James, only 494 of the 1,246 singular readings (39.6 percent) are labelled as nonsense by the ECM editors. That leaves quite a lot of meaningful singular readings to which Colwell and Tune's third reason does not apply. The only valid reason I can see for

37 E.C. Colwell and Ernest W. Tune, "Method in Establishing Quantitative Relationships between Text-Types of New Testament Manuscripts," in *Studies in Methodology in Textual Criticism of the New Testament*, NTTS 9 (Leiden: Brill, 1969), 58.

38 The claim is also made by Wisse, *Profile Method*, 38.

excluding these meaningful singular readings from the CBGM is the assumption that singular readings do not reflect the scribe's exemplar. But it must be noted that if singulars were excluded on this basis, this would necessarily imply that we are no longer comparing the texts of our extant witnesses but rather the texts of their non-extant exemplars. This may be warranted in some cases, but we should be clear about what it is we are doing in that case and why.

As it is, I see no reason to exclude singular readings in principle from quantitative studies, including the CBGM. The argument that they do not group manuscripts applies just as well to any reading not shared by any given pair or group of manuscripts. Negative evidence cannot be excluded simply because it is negative. On that principle, we should have to leave out all variants since they are all negative with regard to *some* relationships under question. The same principle applies even more to the CBGM given that it is not primarily interested in groups of witnesses but in individual witnesses. In sum, while it is true that singular readings will almost always be "dead-ends" in the local stemmata and thus will always move their witnesses further away from other witnesses, this can hardly be a defensible reason for leaving them out of consideration. Such variants may not tell us as much about witness relationships as non-singular variants do, but this is not the same as saying that they tell us nothing. In fact, they tell us where a witness has deviated from all others and that deviation is no less genealogical because of it. We agree with David Parker that "rather than distorting the picture, the singular reading is as important as any other reading."[39]

3.2 *Orthographica*

On the question of whether to include orthographic differences, textual critics are widely agreed that such differences have little or no value for genealogy. Thus Epp: "Mere orthographic differences, particularly itacisms and numovables (as well as abbreviations) are 'insignificant' as here defined; they cannot be utilized in any decisive way for establishing manuscript relationships, and they are not substantive in the search for the original text."[40] In his study of the letters of John, Larry Richards found that including movable ν did not reveal any "clear cut pattern and cannot, at least at this stage of observation, tell us anything about relationships."[41] With regard to numerical abbreviations

39 David C. Parker, *An Introduction to the New Testament Manuscripts and Their Texts* (Cambridge: Cambridge University Press, 2008), 164.

40 Epp, "Clarification," 58.

41 Richards, *Classification*, 35. In total, he found forty words involving movable ν. This is out of 600 non-singular variants from 81 witnesses (cf. p. 31).

in early Christian manuscripts, Zachary Cole found that "until more research proves otherwise, number-writing techniques do not seem to be an important factor in either detecting or confirming textual relationships between witnesses, except in a handful of instances."[42] For their part, the volumes of the New Testament in the Greek Fathers have also followed the standard procedure of excluding orthographica.[43] Even Chrys Caragounis, who takes special interest in orthography, accepts Epp's view that such variants have no bearing on manuscript relations.[44] The reason that such differences (sometimes referred to as "accidentals") are usually rejected is that they are thought to be "so heavily copyist bounded, that agreement in accidental readings must be considered coincidental."[45]

The ECM follows this precedent and ignores the most common types of orthographica. These include morphological differences such as the omission of μ from the future forms of λαμβάνω and mixed aorist forms for strong forms. Likewise, common vowel interchanges (αι-ε, ε-η, ει-η-ι-οι, ο-ω) and differences involving doubled consonants are not recorded in the ECM (and therefore the CBGM).[46] The ECM does, however, record 277 other orthographic differences across the Catholic Epistles. A list of those recorded in James is listed in Appendix C. Although such readings are recorded in the ECM, they are not included as such in the CBGM. Instead, they are treated as the variants to which the editors have assigned them. For example, at Jas 2.8/28 where 03 reads σαυτον, this is listed in the ECM as an orthographic variant of σεαυτόν rather than of ἑαυτόν and the CBGM treats 03 accordingly.[47]

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42 Zachary J. Cole, *Numerals in Early Greek New Testament Manuscripts: Text-Critical, Scribal, and Theological Studies*, NTTSD 53 (Leiden: Brill, 2017), 225.

43 As representative of the series, see Donker, *Text of the Apostolos*, 41.

44 Chrys C. Caragounis, *The Development of Greek and the New Testament* (Grand Rapids: Baker, 2006), 490–492. Recent work on the influence of orthographic changes can be found in Timo Flink, *Textual Dilemma: Studies in the Second-Century Text of the New Testament*, University of Joensuu Publications in Theology 21 (Joensuu: University of Joensuu, 2009), 127–216.

45 Salemans, "Building Stemmas," 16.

46 ECM2, 26*–27*. They are, however, retained in the original transcriptions according to Klaus Wachtel, "Editing the Greek New Testament on the Threshold of the Twenty-First Century," *Literary and Linguistic Computing* 15, no. 1 (2000): 48 and H.A.G. Houghton and Catherine J. Smith, "Digital Editing and the Greek New Testament," in *Ancient Worlds in Digital Culture*, edited by Claire Clivaz, Paul Dilley, and Hamidović David, Digital Biblical Studies 1 (Leiden: Brill, 2016), 116.

47 This decision entails that variant units in the ECM that exist only by virtue of an orthographic variation are not included in the CBGM (e.g., Jas 2.2/2).

The one "genuine exception" Epp gives for his principle of excluding orthographica is proper nouns since "some classic text-critical and historical problems turn on the forms of names for persons or places, and both experience and prudence suggest that, other things being equal, these particular orthographic differences be preserved in the critical apparatus and as part of the 'significant' data of textual criticism."[48] For the Catholic Epistles, the ECM treats such variants as orthographica (so σαρρα/σαρα at 1Pet 3.6/4) or simply ignores them when they involve the vowel interchanges mentioned above (so ηλιας/ηλειας is not recorded at Jas 5.17/2). There is, however, no principle stated for handling proper names. Admittedly such names are infrequent enough in the Catholic Epistles that the difference is negligible here. But elsewhere in the New Testament, especially the Gospels, Epp's principle should be followed for the ECM and should be factored in to the CBGM on a case-by-case basis. There are, as Epp rightly notes, cases where the interpretation of the name hangs entirely upon its spelling.[49] And what is important to interpretation is often important to genealogy too.

One further exception not noted by Epp is that involving Carlo Martini's study of P75 and 03 in Luke which found that the close relationship of these two manuscripts extends even to matters orthographic. These cover assimilated ν, elision of alpha in ἀλλά, itacisms and other vowel fluctuations, substitutions of ἐάν for ἄν, doubled consonants, and several others.[50] Martini's primary interest was determining whether 03 was the result of a recension, but his study shows that even orthographic differences may be useful for determining close relationships. Thus, although we agree with Fee that orthographica typically reflect scribal idiosyncrasy and are therefore "generally irrelevant for studying manuscript relationships,"[51] the important exception presented by P75 and 03 suggests that the best way forward may be to include such data in future ver-

48 Epp, "Clarification," 59.

49 For a prominent example, see Eldon J. Epp, *Junia: The First Woman Apostle* (Minneapolis: Fortress, 2005).

50 Carlo M. Martini, *Il problema della recensionalità del codice B alla luce del papiro Bodmer XIV*, Analecta Biblica 26 (Rome: Pontificio Istituto Biblico, 1966), 86–122.

51 Fee, "Types of Textual Variation," 66. For a similar conclusion based on a different corpus, see Willem F. Smelik, "Trouble in the Trees! Variant Selection and Tree Construction Illustrated by the Texts of Targum Judges," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 171. Peter Robinson suggests that agreement in rare or unusual spellings may be genealogically significant (Robinson, "Four Rules," 647). But such cases are infrequent in tradition copied as often as the New Testament.

sions of the CBGM. This could be done with an option to include or exclude such data as the user sees fit. This would give valuable data by which to test their significance in any particular instance.

3.3 *Nonsense Readings*

Errors present a further interesting case. As noted above, the ECM defines "errors" as those readings which make neither logical or grammatical sense to the editors.[52] In this, they should not be confused with Lachmannian "indicative errors" which may or may not make contextual sense. The electronic dataset for the ECM records a total of 1,924 readings labelled as nonsense readings. Importantly, most of these are not recorded in the CBGM as distinct readings. The reason is that the ECM has a principle of assigning errors to the variant they are said to "represent."[53] This decision is important because it affects the CBGM's genealogies. It also exposes a matter touched on already with singular readings, namely, the matter of what textual entities the CBGM intends to relate. Mink explains how errors are handled as follows:

> Errors are usually deemed as the variant they represent incorrectly. In some cases, if the corresponding variant is no longer available, the error has to be corrected and incorporated as another variant. It is theoretically possible that new variants originate specifically from an error. In practice, however, at least in the New Testament tradition, this seems to be rare, as the errors are usually corrected into the underlying variants in the further tradition.[54]

This last claim that errors were usually corrected and thus did not spawn new readings certainly explains why the majority of errors recorded in the New Testament tradition are also singular readings.[55] But this fact alone cannot be taken as an argument against including nonsense readings even if they are singular. We have argued already that singular readings should be included since they provide genealogical information. In fact, nonsense singular readings may often provide even more information than meaningful singular readings. This is because, as Mink noted, they were usually corrected. Where this

52 ECM2, 26*. In the ECM, these are marked by an *f* for *Fehler*.

53 Ibid., 28*, cf. 9*. The German refers to errors which can be "assigned" (*zuordnen*) to variants.

54 Mink, "Problems," 28. Cf. idem, "Contamination, Coherence, and Coincidence," 143 n. 3.

55 See Peter J. Gurry, "The Number of Variants in the Greek New Testament: A Proposed Estimate," *NTS* 62, no. 1 (2016): 110.

has occurred, such corrections constitute a major type of what, in the previous chapter, we termed reversed variation. Such variations occur whenever a reading is changed back to the form that gave rise to it.

The point can be illustrated from Jas 1.1. Most witnesses read the addressee of the letter as Ἰάκωβος … ταῖς δώδεκα φυλαῖς ταῖς ἐν τῇ διασπορᾷ. But a few manuscripts have errors for τῇ διασπορᾷ. For example, 456 has doubled the first alpha, resulting in τῇ διαασπορᾶ probably due to the line break occurring right at the first alpha. At this point, the CBGM's textual flow diagram for Jas 1.1/26–28 shows that 456 is the closest potential ancestor for 1390, a witness which, as expected, has the correct form.[56]

This example is a clear case of Mink's second scenario cited above wherein an error was subsequently corrected. That the text should change in this way is not surprising given the nature of the mistake. It is exactly the kind that a subsequent scribe could easily correct in the normal rhythm of copying. It is an obvious error and thus an easy fix. In such a case the CBGM's current practice means that all this information is lost. The impact is significant given that in 93 percent of the CBGM's 1,924 nonsense readings, the editors have identified an intended variant. In every such case, the CBGM includes an agreement where a disagreement would otherwise be recorded. It also loses one or more cases of non-agreement that would affect genealogical coherence. Given that the CBGM includes a total of 9,290 variants,[57] the nearly 1,800 errors that are assigned to their correct form constitute a loss of about 20 percent—not a small loss.

Certainly, others have argued that such error readings should be excluded from consideration completely. Colwell and Tune, for example, do just that. This judgment rests "upon the high historical probability that neither the original author nor a scribe wrote nonsense, except by inadvertence."[58] In context, Colwell and Tune are particular interested in establishing groups of manuscripts, but their logic matches Mink's. What marks out his discussion is that he justifies the decision to exclude nonsense with an appeal to metaphysics. The metaphysical question with which one must reckon is, as Vinton Dearing posed it, "whether nonsense in a text is part of the text."[59] The answer

56 Both witnesses are only collated in James.

57 Mink, "Contamination, Coherence, and Coincidence," 147 n. 15.

58 Colwell and Tune, "Method in Classifying," 101.

59 Vinton A. Dearing, "Computer Programs for Constructing Textual Stemmas on Genealogical Principles: The Theoretical Basis of PRELIMDI and ARCHETYP," in *La pratique des ordinateurs dans la critique des textes* (Paris: Éditions du centre national de la recherche scientifique, 1979), 115.

to that returns us to the definition of our texts.[60] We are already aware that the CBGM distinguishes a manuscript from its text, but another, seldom-noticed distinction is also made between the text *as preserved in the manuscript* and the text *as it was intended by the scribe who copied it*. In discussing the meaning of the term "initial text," Mink says,[61]

> I should also like to point out in this context that the notion of *text* needs a more exact definition. In textual criticism it is mostly used for what "was written down" in the manuscript, strictly speaking for the sequence of characters the copyist wrote down. On the other hand, the text should convey a meaning. This aim, however, is not directly achieved by the written characters. They represent different things in different languages.

He goes on to say,

> A copyist may grasp the sense of a text and copy this sense. Even if he intends to copy the text true to the letter from the exemplar, he may, at the level of the characters, produce variants which emerge from the meaning of the text. But a copyist may also, particularly in long or difficult sentences, copy groups of words, or line by line, while losing the overall meaning of the text. In the case of very difficult words he might even copy character by character, which may lead to readings which hardly make any sense, and even to spectacular errors.

The problem, Mink says, is that there is typically no obvious way to distinguish variants introduced on purpose and those introduced by accident. The exception to this is the case where the resulting text produces nonsense. In such cases, the text "as a carrier of meaning," has not necessarily been changed. He explains:

> If, however, a copy contains errors, i.e. readings which clearly do not make sense, these do not necessarily modify the text as a carrier of meaning. The copyist had no intention of changing the text [i.e., the meaning]. The copy therefore only contains an erroneous representation of the same

60 For the important connection between Mink's understanding of "text" and the ECM's treatment of error readings, I am indebted to Yii-Jan Lin, *The Erotic Life of Manuscripts: New Testament Textual Criticism and the Biological Sciences* (Oxford: Oxford University Press, 2016), 138–141.

61 The following block quotes are all taken from Mink, "Problems," 26–27.

> text at the level of the characters, which nevertheless sometimes renders it unrecognisable as a carrier of meaning.[62]

This view connects directly with the CBGM's treatment of error readings. Given Mink's definition of the "text" as "a carrier of meaning" and his view that nonsense readings are cases where the scribe's intention is clearly visible, it follows that "the ECM records the witnesses of erroneous readings as witnesses for the variants which they represent, albeit defectively."[63] This statement is followed by an instructive explanation of the conjecture at 2 Pet 3.10/48–58 wherein the initial text now reads οὐχ εὑρεθήσεται, a reading unattested in the Greek witnesses. For Mink, the reading without the negative (found in the earliest witnesses) is clearly erroneous and conjecture is thus "unavoidable."[64]

This particular correction provides a useful test case for Mink's definition of "text" as "carrier of meaning." If the text is non-material and should be identified with the intended meaning of the scribe or author, then what exactly has the ECM changed by now printing οὐχ εὑρεθήσεται given that the reading without the negative "does not make sense and must therefore be erroneous"? Mink explains that several alternate readings at this point (e.g., ἀφανισθήσονται and κατακαήσεται) "presuppose and *express more graphically* a text containing the negation."[65] From this we must conclude that the ECM's conjecture has not changed the "text" as the carrier of meaning since here the intended meaning remains obvious (at least to Mink). Instead the ECM has merely "expressed more graphically" the meaning that was already present. But, if that is the case, then, to be consistent, the other variants at this point should all be registered in the ECM as errors of the conjectural reading οὐχ εὑρεθήσεται. Presumably the ECM does not do this because its editors recognize that not all readers of the ECM will agree with Mink that these alternate readings are really nonsensical or that they are clearly intended to represent his conjecture.

Whatever the exact reasons, the decision at 2 Pet 3.10 and its presentation in the ECM shows a disjunction with Mink's theory of "text" and its application

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62 For similar views that define "text" in relation to intention, see B.B. Warfield, *An Introduction to the Textual Criticism of the New Testament* (London: Hodder & Stoughton, 1889), 3–4; G. Thomas Tanselle, *A Rationale of Textual Criticism* (Philadelphia: University of Pennsylvania, 1989), 71.

63 Mink, "Problems," 27.

64 For an extended defense of the reading without the negative as the initial text, see Christian Blumenthal, *"Es wird aber kommen der Tag des Herrn": Eine textkritische Studie zu 2Petr 3,10*, Bonner Biblische Beiträge 154 (Hamburg: Philo, 2007).

65 Ibid., 27; emphasis added.

to nonsense readings. The discrepancy highlights the larger issue about what exactly the CBGM is attempting to relate in its genealogies. Is it relating texts "as carriers of meaning" or texts "as written characters"? The answer, in the case of nonsense readings, is sometimes the one and sometimes the other. Where the editors think they can identify the source of the error, it is that "intended text" which is being related to other such texts. But where the intention is unclear, it is texts "as written characters" which are being related. Given the number of errors recorded in the ECM, this inconsistency is one that needs to be addressed and resolved in future versions. The choice seems to be whether the CBGM should exclude all nonsense readings as genealogically insignificant or whether it should include them in their errant forms.

There are concerns with either procedure. The reason is that the genealogy of nonsense readings is obvious in one direction and difficult to determine in the other. Specifically, the source of the resulting nonsense reading is usually obvious (cf. Jas 1.1 above). This is why the ECM is able to assign so many nonsense readings to other, meaningful variants. The problem is the genealogy in the other direction. Mink must be right that nonsense readings rarely lead to other nonsense readings. But he also recognizes that they were often corrected. Typically, we would expect that they were corrected to the reading of which they are corruptions. The problem this creates for the CBGM is that it results in circular local stemmata in the form of $a \rightarrow f \rightarrow a$, where f is the nonsense reading. Such a stemma is essentially meaningless. The only way to break the circle in the CBGM would be to split the a reading into those which are ancestral to and those which are descendant from the error. As described in the last chapter, genealogical coherence could be put to good use for resolving such cases. Such a procedure would have the effect of always strengthening the textual flows already present since those flows would determine which witnesses of the a reading are ancestral and which are descendant.

Although it means an additional amount of labor, this procedure appears to be the only consistent way for the CBGM to proceed in the case of error readings. To treat them as their "intended readings" as the CBGM currently does is to introduce a methodological inconsistency. It essentially denies the reality of a reading's genealogy simply because the scribe's intention is deemed obvious and known. But it is not at all clear why either our knowledge of such intentions or the intentions themselves should be determinative. An unintentional change may provide as much or even more genealogical information than an intentional change. In neither case is there a necessary connection between the genealogical significance of a change and the intention behind it. Consistency would seem, in this case, to require the extra labor.

3.4 *Corrections*

The category of corrections is one that has been explicitly identified as a current limitation of the CBGM.[66] It is also one that highlights, even more than nonsense readings, the difficulty of defining a text. Unfortunately, there has been little methodological reflection on corrections in the literature on genealogy even where they have been used. In their essay on text-type relationships, for example, Colwell and Tune included data from the correctors of P66, 01, 02, and 032 in Luke 11.[67] In most cases, these corrected texts agree with other witnesses at higher rates than do their uncorrected forms. Unfortunately, Colwell and Tune do not give their absolute numbers and do not discuss the methodology of determining their corrected texts. One assumes that they are made up of the uncorrected text except where corrections exist. Thus their P66 text would be the same as their P66^{c} text where there is no correction in the manuscript. In his expansion of Colwell and Tune's method, Fee likewise included corrections, this time for P66 and 01. Like them, he does not discuss how his corrected texts were constituted, but he does give his data. In all but one case, the corrected text has a higher number of agreements with other manuscripts than the uncorrected text has with them.[68]

In neither case are the corrected texts directly compared to the uncorrected texts. For example, 01* is never directly compared to 01^{c}. This is not the case, however, in a study by Klaus Wachtel on Sinaiticus.[69] In this, it offers an instructive methodological comparison. After some discussion of the correctors in 01, Wachtel focuses on the fifth–seventh-century C^{a} corrector in the Gospels. This corrector's text is then compared with several other witnesses in order to show that C^{a} has brought Sinaiticus into greater conformity with the Byzantine text.[70] Wachtel then considers the text of 01* and 01C^{a} in 1,524 places of varia-

66 Eldon J. Epp, "Critical Editions and the Development of Text-critical Methods, Part 2: From Lachmann (1831) to the Present," in *The New Cambridge History of the Bible: From 1750 to the Present*, ed. John Riches, vol. 4 (Cambridge: Cambridge University Press, 2015), 32.

67 Colwell and Tune, "Method in Establishing Quantitative Relationships," 60.

68 The exception is 01* and 01^{c} in relation to 05 where the former has 35 agreements with 05 and the latter only thirty-one out of a total of sixty-one places of comparison (Fee, "Codex Sinaiticus in the Gospel of John," 228). The sixty-one places are listed in Fee, "The Significance of Papyrus Bodmer II and Papyrus Bodmer XIV–XV for Methodology in New Testament Textual Criticism," 273–277.

69 Klaus Wachtel, "The Corrected New Testament Text of Codex Sinaiticus," in *Codex Sinaiticus: New Perspectives on the Ancient Biblical Manuscript*, ed. Scot McKendrick et al. (London: British Library, 2015), 97–106.

70 Ibid., 102.

tion in the Gospels where there is a clear majority of witnesses in agreement.[71] The results show that 01C^a attests a higher percentage of majority readings than 01*.[72] The uncorrected text of 01 attests 77.5 percent majority readings and 01C^a attests 81.8 percent. If the same test is done only in those places where there is a C^a correction, the numbers are starker: 01* attests only 8.3 percent majority readings whereas C^a attests 68.2 percent. For Wachtel, the comparison provides another window onto the development of the Byzantine text, much like the Harklean Group does in the Catholic Epistles.

In all this, Wachtel's method is analogous to that of Colwell and Tune and Fee before him. But it is his final step where he moves beyond them methodologically. At this point Wachtel compares 01C^a to fifteen other witnesses *including* 01*. The results show that "the C^a text of Codex Sinaiticus is still far closer to the first hand text of the same manuscript than to Byzantine forms."[73] Given that 01C^a has fewer majority readings than the fifth-century 02, Wachtel concludes that the C^a corrections in Sinaiticus confirm that "the theory of an early Lucianic recension leading to the imperial Byzantine text has rightly been abandoned" and that "the development towards the stable medieval mainstream text form was neither homogeneous nor consistent."[74]

The important point of this procedure is that Wachtel has compared 01* directly to 01C^a and drawn conclusions from that comparison. In doing so, he has certainly recognized the value of corrections in that, insofar as they can be dated, they may give us a window on to the text that was valued at a particular time. The issue is that Wachtel's comparison of the corrected text assumes that the corrections give us access to a distinct, third witness. But what is the status of this third witness? Suppose a corrector corrects one copy of the Gospels (x) to a highly valued copy (y) and that the latter is subsequently lost in a terrible library fire. Only if the corrector made every correction possible from y can we use x as a reliable proxy for studying y. If we can date the corrections in x, then we can also date y. This seems to be Wachtel's procedure. The problem is the assumption that the corrector, even if he wanted to make all the possible corrections to x that he could, actually succeeded in doing so. If he did not,

71 The data are taken from Holger Strutwolf and Klaus Wachtel, eds., *Novum Testamentum Graecum: Editio Critica Maior: Parallel Pericopes: Special Volume Regarding the Synoptic Gospels* (Stuttgart: Deutsche Bibelgesellschaft, 2011).

72 We should note that, unlike in Wachtel's dissertation, here he does not clearly distinguish between the "majority text" and the "Byzantine text"; the two are treated synonymously.

73 Wachtel, "Corrected Text," 104.

74 Ibid.

then we only have partial access to *y*. Since we only have access to *x*, we have no way of knowing just how partial the access it provides to *y* is. This means that Wachtel's comparison and the conclusions drawn from it need to be used with due caution.

Fortunately, this is not currently an issue for the CBGM for the simple reason that "only variants were counted that appear in the first hands of manuscripts containing the continuous text."[75] Mink explains:

> The reason for disregarding corrections generally is that the basic data used for the ECM do not differentiate between immediate corrections of the first hand clearly rejecting what (erroneously) was written first and other corrections. In many cases the evidence for first hand corrections will not be sure.[76]

In other words, because of the difficulty of determining who made the correction, such readings have simply been omitted altogether.

For its part, the ECM has several ways of marking corrections. A reading marked with a "C" denotes a correction, an "A" designates "an alternative reading marked in a manuscript in some way, such as γρ(άφεται) or ἐν ἄλλοις," and a "Z" for the German *Zusatz* ("addition") marks "an interlinear or marginal note in a manuscript which is not clearly either a correction (C) or an alternative reading (A)."[77] Wherever a reading is designated as "C" there will be an accompanying reading marked with an asterisk (*) and wherever "Z" or "A" are used there is also an accompanying "T" reading (for "text"). For the old majuscules 01, 03, and 04, the ECM distinguishes between different correctors using C1–C3.[78]

In James, the ECM does not record any corrections in 01 made by the first hand during initial copying (*in scribendo*). These are designated in the online transcription as "S1".[79] In James, the electronic dataset for the ECM2 shows 495

75 Mink, "Problems," 18. Cf. idem, "The Coherence-Based Genealogical Method, CBGM: Introductory Presentation" (Münster: INTF, 2009), 5, http://www.uni-muenster.de/INTF/cbgm_presentation/download.html; idem, "Contamination, Coherence, and Coincidence," 174 n. 60.

76 Gerd Mink, "Some Notes on Dirk Jongkind's Paper 'Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks'" (paper presented at INTF colloquium, Münster, January 27, 2014), 4.

77 ECM2, 29*.

78 These are identified in ECM2:Supp, 7.

79 See the Codex Sinaiticus website, especially http://codexsinaiticus.org/en/project/transcription_detailed.aspx. In James, there are four such "S1" readings: Jas 2.3/50–56;

TABLE 22 *Corrections* (C)*, additions* (Z)*, and alternate readings* (A) *in the oldest majuscules*

Type	01	02	03	04
C	26	10	33	19
Z	5	0	2	0
A	0	0	0	0

C readings, 274 Z readings, and just eight A readings for a total of 777. The number of each of these found in the early majuscules (01, 02, 03, 04) is shown in Table 22.

As seen here, none of these four majuscules has any "alternate readings" (A). They do have both corrections and additions. But the distinction between these two is not always clear. In 01, for example, none of the five Z readings in James are obviously additions rather than corrections. Indeed, the Sinaiticus website does not distinguish them from most other corrections in James designated by a C in ECM. Looking at all the corrections in James in 01, it appears that the ECM designates readings as Z when they are added above the line. Otherwise they are marked as C. Thus the addition of ε to the left of αυτου in Jas 1.18 and the καί-compendium added to the left of the column in Jas 3.6 are designated as corrections (C) rather than additions (Z). Likewise, in Jas 2.5, one must assume that the change of βασιλιας from επαγγελιας by writing βασι above επ- and writing expunction dots above -αγγε- is not considered an "addition" because it is accompanied by deletion marks. I could think of no other reason. Other readings marked "Z" are even less clear. What reason can be given for marking the marginal additions μοιχοι και (Jas 4.4) and εχεται (Jas 5.10) as corrections rather than additions? Again, I can see no obvious explanation. As it is, the distinction between "additions" and "corrections" should probably be abandoned.

As noted, none of this affects the CBGM since all such readings are left out. With one important caveat, this is the right decision, in my opinion. The caveat is that such readings should be left out only when there is good evidence that they were not created *in scribendo*. The reason is that such corrections mark places where the original scribe has corrected his own mistakes. Since such

5.5/4–8; 5.10/2; 5.14/5. In all cases, the ECM simply records the S1 reading as the reading of 01 *simpliciter*. At Jas 5.10, the website marks the 01* reading as illegible.

corrections are likely to have been in line with the exemplar,[80] we should follow the text the scribe wanted read.

Where corrections are not clearly *in scribendo*, the CBGM should not use them to construct new, additional witnesses. In other words, they should not be combined with the uncorrected readings in their same manuscript to create a more complete witness since this risks creating artificial texts. Instead, most corrections are best treated in the CBGM as (highly) fragmentary witnesses. For purposes of the global stemma and textual flow diagrams, such witnesses would almost certainly have little value. But even with this limitation it is still possible that such corrections might register some interesting results in the pre-genealogical coherence. Where the matter is quite complicated, such as with Sinaiticus, prudence dictates that we leave corrections for methods of inquiry other than the CBGM.

4 Conclusion

The present chapter has considered an issue fundamental to all genealogical methods, the issue of which readings provide reliable genealogical information. For the New Testament, the question takes on particular importance given the size of the New Testament textual tradition and the degree of contamination. Despite a number of attempts to isolate genealogically significant variants, the problem remains that we know of very few manuscript relationships by any means other than their shared variant readings. Schmid's study is helpful for this reason. That study showed that we should not expect our typologies of significant variants to provide secure results. If a change can be made once, it can usually be made twice—and probably was in a tradition as familiar and widely copied as the New Testament. Given this, we need a way to isolate coincidental agreements beyond the typologies. The CBGM offers to address the problem using the overall agreement between witnesses. Since it is unlikely that two scribes would agree coincidentally at a high rate, the CBGM assumes that high agreement between witnesses of a shared reading can suggest that their agreements are genealogically significant. When combined with an assessment of the particular reading in question, the use of such agreement can give greater confidence in determining "false positives." Thus the use of pre-genealogical coherence in concert with the editor's knowledge of the text provides a promising way to address coincidental agreement.

80 On the assumption that such corrections are made toward the exemplar, see Jongkind, *Scribal Habits*, 163.

Finally, this chapter considered the special cases of meaningful singular readings, orthographica, nonsense readings, and corrections. We concluded that all four categories should be included in future editions of the CBGM. The last two categories, however, should be accounted for differently than is currently done. The best scenario for some of these types of readings is to provide the option to see results from the CBGM with and without them. Such a feature would give us the ability to see just how much effect these choices really make.

CHAPTER 7

Limitations and Improvements

David Parker has boldly predicted that "the Coherence-Based Genealogical Method and the use of phylogenetic software will prove to be equal to any past advance in their significance."[1] While not wishing to offer prognostications, it would not be wrong to suggest that the CBGM is one of the most significant developments in New Testament textual criticism in the last century. The preceding chapters have shown that the method largely lives up to its promise as a way to reconstruct the initial text and for studying the text's historical development. It remains here to draw together observations and suggestions about the method. These fall neatly under two headings. Under the first, we discuss several cautions that need to be made about several remaining limitations of the CBGM, limitations that I take to be insoluble at present. These are especially important for all who make use of the CBGM and its results lest use become abuse. In addition, there are some limitations which could be addressed by changes to the future iterations of the method. These are discussed under the heading of "suggested improvements" in the hope that others might take up the task of implementing them.

1 Limitations

1.1 *Contamination Remains a Problem*

It has been said that with the advent of the CBGM, the longstanding problem of contamination is "a problem no longer."[2] The CBGM is said to solve the problem by shifting from a search of manuscript relations to a search for their textual relations, by forgoing the reconstruction of hyparchetypes and allowing multiple ancestors for each witness, and, finally, by using coherence to identify those likely ancestors. In all these decisions, the CBGM distinguishes itself from traditional Lachmannian methods. Despite these important changes, chapter five examined scenarios in which contamination remains a problem for the CBGM. This can happen when contamination replaces the posterior readings

1 David C. Parker, *An Introduction to the New Testament Manuscripts and Their Texts* (Cambridge: Cambridge University Press, 2008), 178.

2 David C. Parker, *Textual Scholarship and the Making of the New Testament: The Lyell Lectures* (Oxford: Oxford University Press, 2012), 84.

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of one ancestor with the prior readings of another close ancestor. As Mink himself discusses, the result is an inversion of the descendant with one of its ancestors.[3] We did suggest that, despite the high level of contamination in the New Testament tradition, such scenarios are probably not frequent because there will often be mitigating circumstances. Such clarity is best found in the construction of the global stemma and not in the textual flow diagrams. This was the case for the Harklean Group. But contamination may remain a problem for which the only solution for the CBGM is evidence from outside the CBGM. Where such evidence is unavailable, Maas's dictum still applies: there is no cure for contamination.[4]

1.2 *History is Not Parsimonious*

A more far-reaching warning needs to be sounded against a principle that is common to all computer stemmatic methods, that of parsimony.[5] The basic principle is simple enough. When faced with multiple hypotheses that explain the same data, the principle of parsimony says that we should prefer the simplest one. Different methods define what constitutes "simplicity" differently. For most cladistic methods, the simplest stemma is the one with the fewest number of textual changes throughout the entire stemma.[6] In the case of the CBGM, the principles used to determine the simplest hypothesis are explicitly based on scribal behavior (cf. chapter two). In my opinion, this puts the CBGM's use of parsimony on better footing than many other computer-assisted stemmatic methods which rarely discuss their notion of "simplicity" in relation to scribal culture.

But even with this advantage, the CBGM faces the problem—as do all uses of parsimony for historical reconstruction—that history is made by human beings who do not always operate in ways we might deem parsimonious. In

3 Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 49–59, 63–67.

4 Paul Maas, *Textual Criticism*, trans. Barbara Flower (Oxford: Clarendon Press, 1958), 49.

5 For other computer-aided methods, see Heather F. Windram and Christopher J. Howe, "An Introduction to the Phylogenetic Analysis of Non-Biological Data," in *Internationalität und Interdisziplinarität der Editionswissenschaft*, ed. Michael Stolz and Yen-Chun Chen (Berlin: Walter de Gruyter, 2014), 47. For a helpful discussion of the philosophical problem of parsimony, see Elliott Sober, *Reconstructing the Past: Parsimony, Evolution, and Inference* (Cambridge, MA: MIT Press, 1988), 37–69.

6 See, e.g., Stephen C. Carlson, *The Text of Galatians and Its History*, WUNT II 385 (Tübingen: Mohr Siebeck, 2015), 66–67.

the words of Williams Robins, "Scientific explanations strive to incorporate notions of predictability, probability, or falsifiability, but it is by no means clear that humanists seeking to understand complex products of human agency will find that a statistical inference about probability, or a deductive inference about parsimony, makes one account more compelling than another."[7] In the face of competing hypotheses, parsimony may be the best we can do. But the "best we can do" is not necessarily the same as the "most historically accurate." Unfortunately, such is the nature of all historical reconstruction. As Mink has said, "A hypothesis must never be confused with reality. If we know the reality, we need no hypothesis."[8] I would only add that this is true for our most parsimonious hypotheses too. They are not reality; they are the best we can do in the present state of knowledge.

1.3 *There is No Shortcut to the Causes of Variation*

A third limitation of the CBGM has more to do with its users than the method itself. It warrants saying, however, because new technologies often tempt us to claim more for them than we ought. Simply put, the CBGM cannot tell us the specific cause(s) of any particular variation. For that, the text critic must, as Zuntz put it, "use his brains."[9] So long as computers require human programming and design, none can substitute for having, in the inimitable words of A.E. Housman, "a head, not a pumpkin, on your shoulders, and brains, not pudding, in your head."[10] Arguing for a particular cause of variation requires that all the usual arguments be made; the CBGM provides no shortcuts and no special insights into scribes' minds.

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7 William Robins, "Editing and Evolution," *Literature Compass* 4, no. 1 (2007): 114. Put another way, "The hard problem is to explain why the fact that one theory is simpler than another tells you anything about the way the world is" (Elliott Sober, *Ockham's Razors: A User's Manual* [Cambridge: Cambridge University Press, 2015], 2). Cf. the similar point in Bengt Alexanderson, *Problems in the New Testament: Old Manuscripts and Papyri, the New Coherence-Based Genealogical Method* (*CBGM*) *and the Editio Critica Maior* (*ECM*), Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis, Humaniora 48 (Göteborg: Göteborg, 2014), 91.

8 Gerd Mink, "Some Notes on Dirk Jongkind's Paper 'Textual Criticism of the New Testament and the Coherence Based Genealogical Method: Some Critical Remarks'" (paper presented at INTF colloquium, Münster, January 27, 2014), 11.

9 Günther Zuntz, *The Text of the Epistles: A Disquisition upon the Corpus Paulinum*, Schweich Lectures (London: Oxford University Press, 1953), 12.

10 A.E. Housman, "The Application of Thought to Textual Criticism," in *Selected Prose*, ed. John Carter (Cambridge: Cambridge University Press, 1962), 150.

The point may seem needless but it must be made because genealogical coherence has occasionally been used as an argument against theologically-motivated changes. Tommy Wasserman, for example, uses the CBGM to argue against theological motive to explain the reading "through water and blood and the Spirit" (δι' ὕδατος καὶ αἵματος καὶ πνεύματος) in 1John 5.6.[11] This reading's poor genealogical coherence is taken to imply multiple emergence which Wasserman explains as speaking "in favor of a repeated intrusion from the passage in John 3:5, rather than an early orthodox corruption that contaminated the tradition."[12] The problem here is not what is affirmed but what is denied. The imperfect coherence does indeed suggest multiple emergence of the reading in question. What it does not do—because it cannot do it—is exclude any particular cause of that multiple emergence; it certainly cannot exclude multiple causes.

On this matter of using coherence to suggest causality, Holger Strutwolf is more careful but still illustrates the temptation. He notes the poor coherence between P72 and 1735 in their agreement in reading μάρτυς τῶν τοῦ θεοῦ παθημάτων in 1 Pet 5.1 and suggests that since 1735 has no known theological tendencies like P72, the likeliest explanation for it in 1735 is mere accident. What is possible for 1735, Strutwolf concludes, must also be possible for P72.[13] This is true. Nevertheless, there remains a danger of confusing "multiple emergence" with "emergence by a single cause." It certainly is possible that the reading in P72 is not theologically motivated, but it is also possible that the same reading arose in each case for different reasons. After all, coincidental agreement does not imply agreement *in cause*. The CBGM's ability to detect the former should not be confused with evidence for the latter.

These, then, are some of the limitations of the CBGM that we have encountered in our study. These cannot be overcome except with additional historical

11 Tommy Wasserman, "Criteria for Evaluating Readings in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 603–604; idem, "The Coherence Based Genealogical Method as a Tool for Explaining Textual Changes in the Greek New Testament," *NovT* 57, no. 2 (2015): 212–213. For the argument to which Wasserman is responding, see Bart D. Ehrman, *The Orthodox Corruption of Scripture: The Effect of Early Christological Controversies on the Text of the New Testament*, 2nd ed. (Oxford: Oxford University Press, 2011), 70–71.

12 Wasserman, "Criteria," 604.

13 See Holger Strutwolf, "Scribal Practices and the Transmission of Biblical Texts: New Insights from the Coherence-Based Genealogical Method," in *Editing the Bible: Assessing the Task Past and Present*, ed. John S. Kloppenborg and Judith H. Newman, Resources for Biblical Study 69 (Atlanta: SBL, 2012), 156, 159.

evidence. In several cases, they are not limitations of the CBGM so much as they are limitations of our knowledge of the past. But there is another set of limitations which are due to the CBGM's current form. These are such that we believe they could be mitigated or, in some cases, overcome entirely in future iterations of the method.

2 Suggested Improvements

2.1 *Allow Coincidental Agreements to be Removed*

Textual agreements are textual agreements. They do not cease being such simply because they are not genealogical. Moreover, all witnesses of a given work are related *somehow*. The problem is that for a method like the CBGM which bases witness relationships on variant relationships, coincidental agreements are still a problem. We saw in chapter three that the use of pre-genealogical coherence, when used in concert with good philological judgment, is a good way to detect such agreements. The problem for the CBGM is that such agreements remain part of pre-genealogical agreement all the way through the construction of the global stemma. Only at that point are such agreements discarded and, even then, they are still discarded partly using pre-genealogical coherence. Future versions of the CBGM could address this contradiction by allowing certain agreements between witnesses to be excluded from pre-genealogical coherence. Ideally, this would be an option that could be turned on and off at the user's discretion. In this way, earlier decisions could be revisited and even reversed if later results suggested they should be.

2.2 *Include More Data and Allow for Greater Discrimination*

If coincidental agreements should be capable of being removed or "turned off" in the CBGM, other readings currently excluded should be added. Surely, one of the strengths of the CBGM is its inclusion of more textual data than what has traditionally been used to study the New Testament. This is true both quantitatively and qualitatively. Not only are more extensive collations used in terms of the number of manuscripts and the number of places they are compared, but the CBGM also introduces a new type of data in the form of genealogical coherence. It is hard to disagree with Mink when he says, "Looking at this abundance of data, it is obvious that text-critical work cannot simply continue as before."[14] But despite the emphasis on the abundance of data

14 Gerd Mink, "Contamination, Coherence, and Coincidence in Textual Transmission: The

included in the CBGM, we suggest that the method could still include additional types of variants and witnesses.

With regard to variants, we argued in chapter six that the CBGM should include "error" readings as distinct readings in all cases since they convey valuable genealogical information. We also argued that the user should have the option to include or exclude orthographica since, in cases such as P75 and 03, orthographica may be genealogically significant. Furthermore, we argued in the same chapter that the CBGM could be improved by allowing the user to weigh variants. This is already being done in the version of the CBGM applied to the Avestan textual tradition. In that case, a three-fold schema has been deployed wherein each successive category is deemed more genealogically important than the last.

A good way to approach this for the New Testament would be to include three separate categories that the user could apply to any given variant unit. Ideally, these categories would be value-neutral as far as the computer is concerned. The significance of each category would be determined solely by the user and could be changed in any given use so as to test various categorizations. The computer's only responsibility would be to track which agreements occur in which categories and report on the results. The user would then be able to select which categories they wanted to use for specific tasks. For example, a textual flow diagram could be constructed on any of the three categories in isolation or in combination with each other. In this way, the user could study various typologies and the effect they have on various relationships.

In addition to adding more types of variants and allowing the user to discriminate between them, we suggest that the CBGM should incorporate additional witnesses. In particular, it should include all the evidence of lectionaries, versions, and patristic sources currently included in the ECM. The value of these last two types of evidence is that they often allow us to place readings in time and place. They also take on special significance in those places in the New Testament where text-types have played a prominent role in delineating the text's history. For the CBGM, their inclusion means the possibility of providing fixed reference points for understanding this development in general and for study-

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Coherence-Based Genealogical Method (CBGM) as a Complement and Corrective to Existing Approaches," in *The Textual History of the Greek New Testament: Changing Views in Contemporary Research*, ed. Klaus Wachtel and Michael W. Holmes, Text-Critical Studies 8 (Atlanta: SBL, 2011), 148. Mink's comment here refers specifically to the ECM data but it applies just as much to the CBGM more broadly.

ing the value (or lack thereof) of text-types as a concept. As Kurt Aland noted of the problem of the "Western" text in Acts, it cannot be solved without them.[15]

Thus far, versional and patristic evidence has been omitted from the CBGM without explicit justification. One presumes that the reason is the same as that given for excluding fragmentary witnesses: "(1) due to their small extent they are not very significant and therefore only rarely play a role in the genealogical analysis, and (2) they undermine clarity."[16] But all three types of evidence mentioned here could usefully be included in the CBGM in the same way that fragmentary witnesses already are. An option could be given to include or exclude them as appropriate.[17] Especially at the level of pre-genealogical analysis, I can see no reason not to have such data available. Since pre-genealogical coherence is already displayed as an absolute figure (i.e., *x* percent agreement is based on *y* agreements out of *z* places of comparison), the risk of making false comparisons is low. Moreover, if the objection to including citations and versions is that their testimony is too uncertain to include, the response can only be that their testimony has already been deemed certain enough for inclusion in the ECM.[18] On what grounds could it be argued that their evidence is secure enough to print in the ECM but not to include in the CBGM's databases? As it is, this is an inconsistent practice. Instead, where versions, patristic sources, and lectionaries are recorded in the ECM, their evidence should be included in the CBGM just as the evidence of fragmentary witnesses is now. Certainly, concerted study of the versions and patristic sources will have to move beyond the data of the ECM,[19] but incorporating these data in the CBGM would give investigators a significant head start. By including these additional witnesses,

15 "Nun kann das Problem des 'westlichen Textes' hier nicht erörtert werden, weil das ohne Einbeziehung der Versionen und der Kirchenväter nicht möglich ist." Kurt Aland, ed., *Text und Textwert der griechischen Handschriften des Neuen Testaments: III. Die Apostelgeschichte: Band 1: Untersuchungen und Ergänzungsliste*, ANTF 20 (Berlin: Walter de Gruyter, 1993), 709. Cf. Eldon Epp's main objection to the CBGM in "Textual Clusters: Their Past and Future in New Testament Textual Criticism," in *The Text of the New Testament in Contemporary Research: Essays on the Status Quaestionis*, ed. Bart D. Ehrman and Michael W. Holmes, 2nd ed., NTTSD 42 (Leiden: Brill, 2013), 564–565.

16 Gerd Mink, "Guide to 'Genealogical Queries' (Version 2.0)" (Münster: INTF, 2013), §1b, http://intf.uni-muenster.de/cbgm2/guide_en.html.

17 This answers Curt Niccum's question as to how versional evidence could work in the CBGM. See his *The Bible in Ethiopia: The Book of Acts*, Ethiopic Manuscripts, Texts, and Studies 19 (Eugene, OR: Pickwick, 2014), 68.

18 For the editors' principles for including citation and versional evidence, see ECM2, 22*–23*.

19 As the ECM2 already warns the reader in the introduction (p. 23*).

the CBGM can actually live up to Mink's standard that "hypotheses about coherence and ways of contamination now have to prove their value with regard to the full range of data assembled for the ECM."[20]

2.3 *Provide a Better Presentation of Textual Flow Data*

In addition to including more data, future versions of the CBGM could do a better job of presenting data. This would help users avoid making decisions on a slim basis. This becomes especially important in the textual flow diagrams whose construction can depend on sometimes slight differences. Mink's response to this issue is that significant decisions should not be based on minor differences in the CBGM data.[21] The problem is that these data are not quickly accessible, leaving them "out of sight, out of mind." Much of the data behind these diagrams requires multiple queries for each textual flow. The current version of the CBGM helps somewhat by way of the "show table" feature of the coherence in attestations module. But even this table only shows the level of pre-genealogical coherence between witnesses. What it does not show is the absolute number of previous and posterior readings that determine each relationship. Nor does it show other closely related witnesses for each witness. The problem is exacerbated when textual flow diagrams receive the spotlight so often in public presentations of the method. This is unfortunate given how their construction, as we have seen, makes them prone to misinterpretation. Within the CBGM, they are only available as part of the module for studying coherence at places of variation. That remains their primary value. I suggest the following changes that would increase their usefulness and better guard against misuse.

In the first case, it would be valuable if textual flow diagrams allowed the user to choose how many potential ancestors to show. Currently, only a single ancestor for each witness is displayed. But in the literature on the CBGM, textual flow diagrams have occasionally been shown that display more than one (see Figure 36 in chapter five). But these are not available in the current suite of online tools. It would be helpful to have an option to turn on and off as many as three potential ancestors in the textual flow diagrams, especially where potential ancestors lie outside the attestation in question. This would be a major improvement to one of the CBGM's most important contributions, namely, its ability to show coherence at a particular point of variation. More ancestors would mean a more discriminating view of coherence at particular

20 Mink, "Contamination, Coherence, and Coincidence," 148.

21 Ibid., 165.

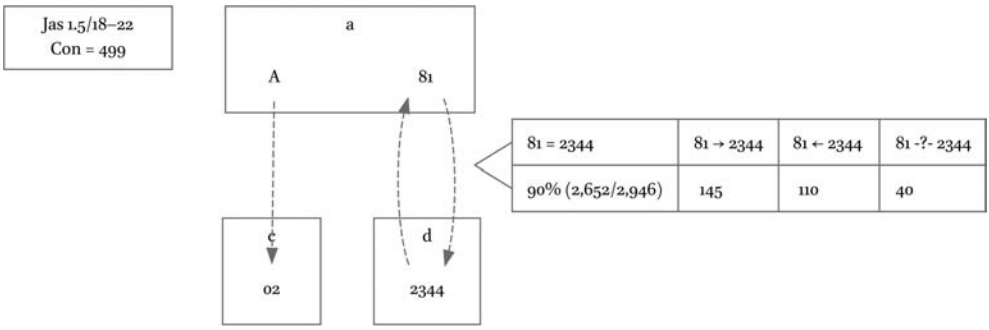

FIGURE 38 *A textual flow diagram showing additional detail for 81 → 2344*

points of variation. As such, it could help both editors and users avoid making bad decisions because of the absence of relevant data.

Secondly, it would be valuable if the diagrams gave more detail about the flow of text between witnesses. I have in mind a visual representation of flow in the opposite direction of what is currently shown as well as an indication of the relative strength of the flow in each direction. This latter feature could be done using the opacity of the vectors involved. In a relationship like 03 → 02, for example, the textual flow could show that 28 percent of the directed textual flow runs from 02 → 03 while the other 72 percent runs the opposite direction. Visually, this would mean setting the opacity for the 02 → 03 vector to 28 percent and the opacity for the 03 → 02 vector to 72 percent. This would give the user an immediate representation of the relative strength of flow. In the case of 03 and 02, it would signal just how strong the flow is from 03 → 02. In other cases, it would show how weak the flow is and thus help the user avoid basing significant judgments on weak relationships. An additional help could be provided if the system could tell the user the absolute numbers involved in particular relationships. In this way, all the relevant data would be readily at hand. An example of such a diagram for Jas 1.5/18–22 is shown in Figure 38.

2.4 *Allow the Reconstruction of Lost Hyparchetypes*

One of the novelties of the CBGM is its abandonment of hyparchetypes or reconstructed ancestors beyond the initial text. In classical Lachmannian stemmatics, reconstructing witnesses is an essential step. This allows the method to produce a more detailed stemma which directs the editor to the reading of the archetype or at least to the most important witnesses. The CBGM, however, foregoes this choice under the claim that searching for such witnesses is "incompatible with the principle of simplicity" and that "the problems that

conventionally require the usage of hyparchetypes are solved by a different method, that derives the textual flow from several ancestors in accordance with contamination."[22] Wachtel explains this in greater detail with the following scenario:

> Two states of text z1 and z2 may be derived from a state x. There may have been an intermediary state z now lost from which z1 and z2 were copied. But whether or not we postulate an hyparchetype z to represent those readings common to z1 and z2, the direction of textual change from x to z1 and z2 can be determined without the intermediary state.[23]

Since the CBGM is particularly interested in the "direction of textual change" rather than in counting branches on the stemma to resolve textual difficulties, the loss of intermediaries is of little consequence. This may be true for the CBGM's textual flow diagrams, but there are cases where postulating lost ancestors is valuable. In particular, reconstructing lost ancestors provides more detail, taking us that much closer to historical manuscript relations. To be specific, a global stemma with witnesses that have five or six ancestors is likely to be further removed from the historical manuscript reality than it has to be. It is extremely unlikely that scribes used five or six exemplars for a single book or section of a manuscript. Stemmata that postulate lost hyparchetypes have fewer ancestors per witness and that may close the gap between textual relations and manuscript relations. The results would still be hypotheses, but their increased detail would be of greater value, for instance, to those interested in studying the text of various stages in the tradition.[24] For instance, one may well want to reconstruct the hyparchetype for the Harklean Group in order to consider its relationship to Thomas's Greek *Vorlage* and to other manuscripts and versions of the same century. This could be done by producing hyparchetypes from the agreements of a witness's stemmatic ancestors and then letting the editor fill in the remaining gaps. For the CBGM, reconstructed hyparchetypes could be produced using the data for the global stemma and there might even be cases where it would be useful to feed hyparchetypes

22 Gerd Mink, "Problems of a Highly Contaminated Tradition: The New Testament: Stemmata of Variants as a Source of a Genealogy for Witnesses," in *Studies in Stemmatology II*, ed. Pieter van Reenen, August den Hollander, and Margot van Mulken (Philadelphia: John Benjamins, 2004), 48.

23 Spencer, Wachtel, and Howe, "Greek Vorlage," §14.

24 Such as Stephen C. Carlson, "Comments on the Coherence-Based Genealogical Method," *TC* 20 (2015): 1–2, http://rosetta.reltech.org/TC/v20/TC-2015-CBGM-Carlson.pdf.

back into the system's earlier stages. Various options could usefully be explored depending on the needs of the investigator.

2.5 *Texts Need to be Defined Clearly and Consistently*

In the previous chapter, we noted that there is currently an inconsistency in how the CBGM defines the "text." Typically, the text of a witness is defined as the text of the first hand of the manuscript in which it is found. But when it comes to "error" or nonsense readings, the CBGM defines the text as what was intended by the scribe. We argued that this should be remedied by including all error readings as they are rather than as their putative correct form. This point is closely related to the much larger question of how texts are defined for the purposes of textual genealogy. In chapter five, we showed how the delineation of the "Byzantine text" can have significant consequences for one's conception of transmission history. Even the ECM includes two potentially conflicting definitions of the "Byzantine text." In one case it is defined as all the agreed readings of Byzantine manuscripts. By this definition, it is "generally identical with the primary line text."[25] But, on the same page, the Byzantine text is also defined *against* this same primary line text. By that definition, it is never identical with the primary line text. Thus the same term is used for almost completely opposite entities. It is not hard to imagine how these two definitions, if not carefully distinguished, could lead to significantly different conclusions about the value of the Byzantine text.[26] Going forward, users of the CBGM must be aware of how fundamental the issue of defining a "text" is for any comparisons that are done with the aim of determining textual genealogy. Such definitions should not be assumed; they must be clearly explained and defended in line with the goals of any particular study.

2.6 *Allow Coherence to be Studied across Variation Units*

This suggestion has to do with a topic that has only been briefly touched on in in this study. Currently the CBGM only detects contamination within the boundaries of a single variation unit. The problem is that contamination as a historical occurrence is not so limited. Contamination can often occur across segments, including different works entirely. The easiest cause of such contamination is harmonization. This is most common in the synoptic Gospels, of

25 ECM2:Supp, 10.

26 A confusion of this type surfaces in the critique of the Byzantine text in Stanley E. Porter and Andrew W. Pitts, *Fundamentals of New Testament Textual Criticism* (Grand Rapids: Eerdmans, 2015), 91–92 n. 3. Depending on how they define the Byzantine text, their argument against its textual value is either circular or demonstrably false.

course. But even in the Catholic Epistles, there are ready parallels between Jude and 2 Peter where harmonizing likely occurred.[27] Moreover, as Peter Rodgers reminds us, the use of the Old Testament constitutes "an added factor that can contribute to 'contamination.'"[28] For the Catholic Epistles, he cites the reference to Abraham in Jas 2.23 as a possible example. Since Abraham is nowhere else called a "friend" (φίλος) of God, but he is said to be a "servant" (δοῦλος) of God in Ps 104:42 (LXX), Rodgers suggests that this Old Testament text could well have influenced some scribes of James. This "added factor" of Old Testament influence would be difficult to account for in the CBGM since, in most cases, Septuagint witnesses would be hard to compare to New Testament ones. But for cases where the contaminating influence may be within the New Testament itself, it would be possible to build a version of the CBGM that could bring coherence to bear on such possibilities. This could be done by building textual flow diagrams that allowed the user to explore coherence between variants of different variant units. Thus, the user could compare the coherence between witnesses attesting variants in both 2 Pet 2.17 and Jude 12, for example. Such a capability could be especially valuable for studying harmonization not least in the synoptic Gospels.[29]

2.7 *Open the Method to the Public*

The final improvement on the CBGM may be the most obvious, but, just for this reason, it risks being forgotten or ignored. This would be unfortunate as it remains the most pressing problem currently facing the method. In its current form, the CBGM remains a tool that can only be used to its full extent by the editors of the ECM. While this study has had the advantage of using a private installation of the CBGM, it remains just that: private. Moreover,

27 For discussion of specific examples, see Tommy Wasserman, *The Epistle of Jude: Its Text and Transmission*, Coniectanea Biblica New Testament Series 43 (Stockholm: Almqvist & Wiksell, 2006), 99–102.

28 Peter R. Rodgers, "Review of *The Textual History of the Greek New Testament*," *NovT* 54, no. 4 (2012): 197. For further examples, see his *Text and Story: Narrative Studies in New Testament Textual Criticism* (Eugene, OR: Pickwick, 2011).

29 We should note that what we are asking for is already being done in limited form in the CBGM. Already witnesses can be connected across attestations within the *same* variant unit; what we are asking is that they also be connected across attestations in *different* variant units. For the genealogical data for the Gospels, see Holger Strutwolf and Klaus Wachtel, eds., *Novum Testamentum Graecum: Editio Critica Maior: Parallel Pericopes: Special Volume Regarding the Synoptic Gospels* (Stuttgart: Deutsche Bibelgesellschaft, 2011) and the online tools referenced therein.

even this version has come with the need for semi-regular adjustment, revision, and de-bugging from the team in Münster. For this regular help and assistance, I am nothing but grateful. But if the CBGM is to become a widely-used tool, one that is trusted by text critics and actually used by exegetes and translators, it absolutely must be opened up for public use and scrutiny. This means, at a minimum, that users would have access to their own version of the software where they are free to make their own textual decisions and explore the results. The team in Münster is eager for this as well but, unfortunately, resources have prevented it from happening. This is most unfortunate as I predict that the CBGM will continue to be met with frustration and even suspicion by New Testament scholars until this changes. Stephen Carlson is regrettably right to say that "textual criticism already has the reputation of being esoteric, and there is a reasonable concern that the CBGM could create a priesthood within a priesthood, where only those behind the curtain are privy to its mysteries."[30] Until scholars can actually get their hands on it and see how it works in practice, they are unlikely to see it as the methodological advance and useful tool that it is.

3 Conclusion

This chapter has drawn together various threads strung throughout the preceding chapters. In some cases, these threads emerged in the course of explaining the method, probing it for weaknesses, and testing particular uses of it. If the limitations mentioned here serve as a warning against abusing the method, the suggested improvements certainly suggest that it is worth improving. In the next chapter, we will summarize the study, drawing out a number of what might be called its "unintended consequences" before offering our final verdict on the CBGM.

30 Carlson, "Comments," 1.

Summary and Conclusion

This study has offered a close analysis of one of the most important developments in New Testament textual criticism in recent time. Thus far the CBGM has elicited both excitement and halting reservation from the academic community. Many have struggled to understand it, including many of its critics, resulting in a lack of proper engagement. The preceding study has tried to remedy the neglect and it remains only to summarize its findings and to offer a final evaluation of the animating question: is the CBGM to be endorsed or rejected as a text-critical tool?

Part One was concerned to offer an overview of the CBGM. Chapter one began with the method's development and reception. This demonstrated how the method has matured over time and how it became one of the defining characteristics of the ECM. This history of the method also exposed some of its tensions, especially on the matter of history. This issue came up several times in the review of scholarly responses. Above all, the survey of the method's reception exposed the need for a fresh statement of the method and this followed in chapter two. The aim was to present the method clearly, accurately, and at its best. Besides paving the way for the remaining analysis, this fresh statement of the method is a contribution in its own right given the difficulty many have found with prior explanations. This chapter also illustrated how the CBGM has been used to edit the text of the Catholic Epistles, correcting any impression that a machine has replaced human editors.

Part Two was the first part of the formal examination of the method and looked in detail at the usefulness of the CBGM for reconstructing the initial text. Chapter three addressed the nature of the initial text itself and concluded that, despite the confusion about the term, it has a single definition which allows for multiple referents. These range from the author's original text to the archetype of the tradition to a later editorial text or edition. Which of these referents is in view must be settled corpus-by-corpus and editor-by-editor; they are decisions which cannot be left to assumption. We also considered the claim that the CBGM is a "meta-method" and concluded that this needs to be qualified since it is most congenial to the method of its designer, reasoned eclecticism. While addressing this question we also contributed a significant point of comparison to the ECM editors' use of the CBGM by producing a version that uses the Byzantine text as the initial text throughout the Catholic Epistles. Among other things, this challenged some of the claims about the CBGM particularly on how it values witnesses at the head of the textual stream. Additional study of this version of the CBGM may bring further insights to light, a hope encouraged

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by its being made publicly available at http://intf.uni-muenster.de/gurry. A final section of this chapter showed how the CBGM has precedent for using textual agreement to detect coincidental agreement and that this use is not at great risk of being viciously circular. This feature of the method should be of interest to text critics far beyond the confines of the New Testament given that coincidental agreement poses such a significant problem for relating texts.

Chapter four used this ability of the CBGM to study scribal habits, a particularly important aspect of text-critical practice. In particular, all the variations in James that are in the CBGM were considered. The results were then compared to the same material but limited to singular readings. This showed that the CBGM has some important benefits over this widely-used method. Along the way, we found that the most common textual change in James is substitution, that omissions outnumber additions only slightly, and that transpositions are the least frequent change. No text-critical canon can be formulated on the basis of length from these results. These results should be of value for the study of scribal habits in general and for text-critical work on James in particular. Future studies could profitably expand this use of the CBGM to other parts of the Catholic Epistles as well.

Part Three took up the question of whether and how the CBGM can illuminate the text's history. In chapter five we addressed various challenges to the method on this front. In the first case, it was demonstrated that the view that the CBGM is uninterested in history is based on an unjustified definition of what constitutes history. A more significant challenge to the CBGM on the matter of history is that its fundamental principle of relating witnesses may sometimes fail. To test this, a suggested example of such a case was examined in greater detail using the Harklean Group and the Byzantine text. Despite appearances, however, the CBGM does not invert their proper relationship when each "text" was properly defined. Our study did, however, clarify the nature of these two texts, suggesting that, rather than being directly related, they are most likely distributaries of an earlier shared textual stream. This has potential implications for our understanding of the Byzantine text in the Catholic Epistles and could be a further avenue for additional research. As an additional contribution, this chapter provided a new portion of the global stemma and, importantly, did so in a novel way that vastly reduces the labor involved. This too could be explored in further work. In all, this chapter vindicated the CBGM's ability to inform us about textual history while, at the same time, highlighting remaining limitations and cautions on that front.

Chapter six looked at what variants should be used for determining genealogy in the CBGM. Previous work on this matter was surveyed and compared with the CBGM's way of determining when agreements are genealogically sig-

nificant. Building on the work from earlier chapters, this method was endorsed but it could be improved by providing editors with a way to weight certain agreements differently from others. Such a system has already been profitably employed by those applying the method outside the New Testament. The final section of this chapter considers a number of "special cases" involving singular readings, orthographica, nonsense readings, and corrections. In our opinion, all of these types should be included in the CBGM but with certain caveats. In the case of orthographica and nonsense readings, we argued that both should be included. In the case of nonsense readings, there is an inconsistency in how they are currently treated by the CBGM on the one hand and the ECM on the other. In the case of orthographica, there should be an option whether or not to include them in order that their genealogical value can finally be submitted to sustained scrutiny. Both these require revision to the method's current practice.

The final chapter provided a series of limitations and suggested improvements. The limitations serve as warnings against ignoring the ongoing problem of contamination, assuming that history is necessarily simple, or thinking that the CBGM can lift the veil to reveal scribal motivations to us. Users of the method need to be aware of these limits lest they abuse its results. These were followed by a series of suggestions for improving the method in future iterations, all of which culminate in the most pressing need which is to provide an openly accessible version of the software for use beyond Münster or Birmingham. If the limitations serve as warnings against misuse, the improvements serve as an encouragement for greater use. They are offered in the hope of spurring further development and wider use of the method.

In summary, we find that the CBGM is a valuable tool for reconstructing the text of the new Testament and for studying its textual history. We hope that future studies will clarify any additional concerns while expanding its value for answering our remaining questions about the text of the New Testament—and beyond.

Appendix A: Changes in NA/UBS/ECM

Presented here is a list of differences between the NA27, the ECM1, and the ECM2/NA28/UBS5. This includes both textual differences and differences in the marking of editorial uncertainty by brackets (NA27), bold dots (ECM1), or diamonds (ECM2). There is a total of 125 places where the editions differ among themselves. This includes eight places marked by brackets but not dots or diamonds, sixty-five places marked by dots but not diamonds, twenty-four places marked by diamonds but not dots, and nineteen places marked by both dots and diamonds. A dagger (†) marks a change in the NA27 from the NA25. In keeping with the meaning of the diamond (♦) in the ECM2, I have listed both readings which the editors felt held equal claim to being the initial text. Omissions are represented with a dash except where doing so would have been unclear. I have not included spelling changes as they are irrelevant to the CBGM.

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
Jas	1.20	ουκ εργαζεται	·ουκ εργαζεται·	ου κατεργαζεται
	1.22	μονον ακροαται†	ακροαται μονον	♦ μονον ακροαται αρκοαται μονον
	2.3	εκει η καθου	·η καθου εκει·	η καθου εκει
	2.4	ου διεκριθητε	ου διεκριθητε	και ου διεκριθητε
	2.11	μοιχευεις φονευεις	μοιχευεις φονευεις	♦ μοιχευεις φονευεις φονευεις μοιχευεις
	2.15	λειπομενοι	λειπομενοι	λειπομενοι ωσιν
	2.19	εις εστιν ο θεος	·εις εστιν ο θεος·	εις εστιν ο θεος
	3.4	ανεμων σκληρων	·ανεμων σκληρων·	♦ ανεμων σκληρων σκληρων ανεμων
	3.8	ουδεις δαμασαι δυναται ανθρωπων	·ουδεις δαμασαι δυναται ανθρωπων·	ουδεις δαμασαι δυναται ανθρωπων
	3.15	αυτη η σοφια ανωθεν κατερχομενη	·αυτη η σοφια ανωθεν κατερχομενη·	αυτη η σοφια ανωθεν κατερχομενη
	4.9	μετατραπητω	μετατραπητω	♦ μετατραπητω μεταστραφητω
	4.10	κυριου	κυριου	του κυριου
	4.12	[ο]† νομοθετης	·ο· νομοθετης	ο νομοθετης
	4.12	ο κρινων	ο κρινων	♦ ο κρινων ος κρινεις

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(cont.)

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
	4.14	το† της αυριον	·το· της αυριον	♦ το της αυριον τα της αυριον
	4.14	*omit* γαρ	·*omit* γαρ	*omit* γαρ
	5.4	απεστερημενος†	απεστερημενος	♦ απεστερημενος αφυστερημενος
	5.10	εν τω ονοματι κυριου	·εν τω ονοματι κυριου·	εν τω ονοματι κυριου
	5.14	[αυτον]†	αυτον	αυτον
	5.18	υετον εδωκεν	·υετον εδωκεν·	♦ υετον εδωκεν εδωκεν υετον
1 Pet	1.6	[εστιν]†	εστιν	εστιν
	1.6	λυπηθεντες	·λυπηθεντας·	λυπηθεντας
	1.8	ιδοντες	·ιδοντες·	ιδοντες
	1.9	το τελος της πιστεως [υμων]†	·το τελος της πιστεως υμων·	το τελος της πιστεως υμων
	1.12	[εν]	·εν·	εν
	1.16	[οτι]	–	–
	1.16	εγω αγιος [ειμι]†	·εγω αγιος·	εγω αγιος
	1.18	υμων αναστροφης πατροπαραδοτου	·υμων αναστροφης πατροπαραδοτου·	υμων αναστροφης πατροπαραδοτου
	1.22	[καθαρας]† καρδιας	·καθαρας καρδιας·	♦ καθαρας καρδιας καρδιας
	2.5	οικοδομεισθε	·οικοδομεισθε·	οικοδομεισθε
	2.5	[τω]† θεω	·τω· θεω	*omit* τω
	2.6	ακρογωνιαιον εκλεκτον εντιμον†	·ακρογωνιαιον εκλεκτον εντιμον·	ακρογωνιαιον εκλεκτον εντιμον
	2.11	απεχεσθαι	·απεχεσθαι·	απεχεσθαι
	2.12	εποπτευοντες	εποπτευοντες	♦ εποπτευοντες εποπτευσαντες
	2.16	αλλ ως θεου δουλοι	·αλλ ως θεου δουλοι·	αλλ ως θεου δουλοι
	2.20	*omit* τω	·*omit* τω	*omit* τω
	2.25	επεστραφητε	·επεστραφητε·	επεστραφητε
	3.1	[αι]† γυναικες	·αι· γυναικες	αι γυναικες
	3.1	και ει τινες απειθουσιν	·και ει τινες απειθουσιν·	και ει τινες απειθουσιν
	3.5	*omit* τον	*omit* τον	♦ *omit* τον εις τον θεον
	3.20	ολιγοι	ολιγοι	♦ ολιγοι ολιγαι

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
	3.22	[του]† θεου	·του· θεου	του θεου
	4.5	ετοιμως εχοντι κριναι	·ετοιμως εχοντι κριναι·	ετοιμως εχοντι κριναι
	4.11	εις τους αιωνας των αιωνων αμην	·εις τους αιωνας των αιωνων αμην·	♦ εις τους αιωνας των αιωνων αμην εις τους αιωνας αμην
	4.14	αναπαυεται	·αναπαυεται·	αναπαυεται
	4.16	τω ονοματι τουτω	·τω μερει τουτω·	τω μερει τουτω
	4.17	[ο] καιρος	·ο καιρος·	ο καιρος
	4.19	αγαθοποιια	·αγαθοποιια·	αγαθοποιια
	5.1	ουν	ουν	τους
	5.2	[επισκοπουντες]†	επισκοπουντες	επισκοπουντες
	5.2	κατα θεον	·κατα θεον·	κατα θεον
	5.5	[ο] θεος	·ο· θεος	ο θεος
	5.8	[τινα] καταπιειν	·τινα καταπιειν·	τινα καταπιειν
	5.9	[τω] κοσμω ημων αδελφοτητι	·τη εν κοσμω ημων αδελφοτητι·	♦ τη εν κοσμω ημων αδελφοτητι τη εν τω κοσμω ημων αδελφοτητι
	5.10	εν χριστω [ιησου]†	·εν χριστω·	♦ εν χριστω εν χριστω ιησου
	5.11	– †	· –	♦ – των αιωνων
	5.14	εν χριστω ιησου	εν ·χριστω·	♦ εν χριστω εν χριστω ιησου
2 Pet	1.2	του θεου και ιησου του κυριου ημων	·του θεου και ιησου του κυριου ημων·	του θεου και ιησου του κυριου ημων
	1.4	τιμια και μεγιστα ημιν επαγγελματα δεδωρηται	·τιμια και μεγιστα ημιν επαγγελματα δεδωρηται·	♦ τιμια και μεγιστα ημιν επαγγελματα δεδωρηται ημιν και μεγιστα επαγγελματα δεδωρηται
	1.4	της εν τω κοσμω εν επιθυμια φθορας	·της εν τω κοσμω εν επιθυμια φθορας·	♦ της εν τω κοσμω εν επιθυμια φθορας της εν κοσμω εν επιθυμια φθορας
	1.5	τουτο δε	τουτο δε	♦ τουτο δε δε τουτο
	1.9	αμαρτιων	·αμαρτιων·	♦ αμαρτιων αμαρτηματων

(cont.)

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
	1.12	διο μελλησω	·διο μελλησω·	διο μελλησω
	1.21	προφητεια ποτε	·προφητεια ποτε·	♦ προφητεια ποτε ποτε προφητεια
	2.3	νυσταζει	νυσταζει	♦ νυσταζει νυσταξει
	2.6	[καταστροφη] κατακρινεν	·καταστροφη κατακρινεν·	καταστροφη κατακρινεν
	2.6	ασεβε[σ]ιν†	·ασεβειν·	ασεβειν
	2.11	παρα κυριου†	παρα κυριω	♦ παρα κυριω –
	2.15	καταλειποντες	·καταλιποντες·	καταλιποντες
	2.18	ασελγειαις	·ασελγειαις·	ασελγειαις
	2.18	ολιγως	·ολιγως·	οντως
	2.19	*omit* και	·*omit* και	*omit* και
	2.20	κυριου [ημων] και σωτηρος ιησου χριστου†	·κυριου ημων και σωτηρος ιησου χριστου·	κυριου και σωτηρος ιησου χριστου
	2.22	κυλισμον	·κυλισμον·	♦ κυλισμον κυλισμα
	3.3	[εν] εμπαιγμονη	·εν εμπαιγμονη·	εν εμπαιγμονη
	3.3	εσχατων	εσχατων	♦ εσχατων εσχατου
	3.3	κατα τας ιδιας επιθυμιας αυτων πορευομενοι	·κατα τας ιδιας επιθυμιας αυτων πορευομενοι·	κατα τας ιδιας επιθυμιας αυτων πορευομενοι
	3.10	*omit* η	*omit* η	♦ *omit* η η ημερα
	3.10	ευρεθησεται	ουχ ευρεθησεται	ουχ ευρεθησεται
	3.11	[υμας]	υμας	υμας
	3.16	επιστολαις	·ταις επιστολαις·	ταις επιστολαις
	3.16	στρεβλουσιν	·στρεβλωσουσιν·	στρεβλωσουσιν
	3.18	αυξανετε	·αυξανετε·	αυξανετε
	3.18	[αμην]†	· –	–
1Jn	1.4	ημων	·ημων·	♦ ημων υμων
	1.7	δε	· –	♦ – δε
	1.8	ουκ εστιν εν ημιν	·ουκ εστιν εν ημιν·	♦ ουκ εστιν εν ημιν εν ημιν ουκ εστιν

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
	2.4	οτι	·οτι·	♦ οτι
				–
	2.4	και	·και·	και
	2.6	[ουτως]	ουτως	♦ ουτως
				–
	2.17	αυτου	αυτου	♦ αυτου
				–
	2.29	ειδητε	ειδητε	♦ ειδητε
				ιδητε
	2.29	οτι και	·οτι και·	οτι και
	3.7	τεκνια	τεκνια	παιδια
	3.13	[και]†	·και·	και
	3.19	πεισομεν	·πεισομεν·	πεισομεν
	3.21	[ημων]†	ημων	ημων
	3.23	πιστευσωμεν	·πιστευσωμεν·	πιστευσωμεν
	4.12	εν ημιν τετελειωμενη εστιν†	εν ημιν τετελειωμενη εστιν	♦ εν ημιν τετελειωμενη εστιν
				τετελειωμενη εστιν εν ημιν
	4.20	ου	ου	♦ ου
				πως
	5.1	[και]†	και	και
	5.5	[δε] εστιν†	·δε εστιν·	δε εστιν
	5.6	υδατι και εν τω αιματι	·υδατι και εν τω αιματι·	♦ υδατι και εν τω αιματι
				υδατι και τω αιματι
	5.10	εν εαυτω†	εν αυτω	εν αυτω
	5.11	εδωκεν ημιν ο θεος†	·εδωκεν ημιν ο θεος·	♦ εδωκεν ημιν ο θεος
				εδωκεν ο θεος ημιν
	5.18	αυτον	εαυτον	εαυτον
	5.21	εαυτα	·εαυτα·	♦ εαυτα
				εαυτους
2 Jn	2	μενουσαν	·μενουσαν·	μενουσαν
	5	καινην γραφων σοι†	καινην γραφων σοι	γραφων σοι καινην
	9	και τον πατερα και τον υιον εχει	·και τον πατερα και τον υιον	♦ και τον πατερα και τον υιον
			εχει·	εχει
				και τον υιον και τον πατερα εχει
	12	ημων	ημων	♦ ημων
				υμων
	12	πεπληρωμενη η	πεπληρωμενη η	η πεπληρωμενη

(cont.)

Book	Ref.	NA27	ECM1	ECM2/NA28/UBS5
3Jn	3	γαρ	·γαρ·	γαρ
	4	εν τη αληθεια	εν τη αληθεια	εν αληθεια
	9	τι	·τι·	τι
	10	εκ	·εκ·	εκ
Jude	5	δε	·δε·	δε
	5	[υμας]†	υμας	υμας
	5	[ο] κυριος†	·ιησους·	ιησους
	14	αγιαις μυριασιν αυτου	·αγιαις μυριασιν αυτου·	αγιαις μυριασιν αυτου
	16	επιθυμιας εαυτων†	·επιθυμιας εαυτων·	επιθυμιας εαυτων
	17	ρηματων των προειρημενων	·ρηματων των προειρημενων·	♦ ρηματων των προειρημενων προειρημενων ρηματων
	18	[οτι]†	· –	♦ – οτι
	18	επ εσχατου [του] χρονου εσονται	·επ εσχατου χρονου εσονται·	επ εσχατου χρονου εσονται
	20	εποικοδομουντες εαυτους τη αγιωτατη υμων πιστει	·εποικοδομουντες εαυτους τη αγιωτατη υμων πιστει·	εποικοδομουντες εαυτους τη αγιωτατη υμων πιστει
	21	τηρησατε	·τηρησατε·	τηρησατε
	25	προ παντος του αιωνος	·προ παντος του αιωνος·	προ παντος του αιωνος

Appendix B: Harklean Readings in 1 John

Listed here are the sixty-eight readings where at least two of the three members of family 2138 (1505, 1611, 2138) agree against the initial text in 1 John. These constitute the "Harklean text" as discussed in chapter five.

1.3/10–12d	2.20/20b	3.16/44b	5.1/37b
1.3/36b	2.22/6b	3.17/56–60e	5.6/16c
1.4/8b	2.27/6–8b	3.19/4–6b	5.7/3b
1.4/16c	2.27/18–22f	3.19/28–30b	5.10/22b
1.5/10b	2.28/16b	3.21/10–14e	5.11/18–24b
1.5/22d	2.28/20–22b	3.23/16b	5.12/9b
1.7/3b	2.28/30–40d	3.24/52–54b	5.12/10–14c
1.8/23b	2.29/24b	4.2/6c	5.15/34–36b
1.8/24–30b	2.29/32b	4.3/17b	5.16/30–32e
1.9/24–28b	3.2/22b	4.7/32b	5.16/34–42b
1.10/26–32b	3.5/16b	4.10/18b	5.18/24–28d
2.1/16b	3.6/28–32b	4.11/2–10b	5.18/36b
2.7/44b	3.11/10b	4.17/31b	5.20/2–4b
2.12/12–16b	3.13/2b	4.17/46–52b	5.20/20b
2.18/16b	3.13/8b	4.18/18–20b	5.20/30–32e
2.19/40b	3.14/35c	4.19/5c	5.20/66–70c
2.19/48b	3.15/36–40c	4.19/10b	5.21/6b

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Appendix C: Orthographica in James

The following are the eighty-four orthographic readings recorded in the ECM for James.

Variant address	Reading
1.3/2a	γιγνωσκοντες
1.4/14a	ιν’
1.6/24a	θαλαττης
1.7/14–18a	οτι ληψεται τι
1.7/14–18a	επιληψεται τι
1.7/14–18c	οτι ληψεται
1.11/56–62b	εν ταις πορειαις αύτυου
1.12/18a	ληψεται
1.15/22a	αποκυεῖ
1.15/22b	κυεῖ
1.18/26–28b	αύτυου κτισματων
1.21/18a	πραοτητι
1.21/24–28a	ενφυτον λογον τον
1.22/2a	γιγνεσθε
1.24/6a	αύτον
1.25/30a	γεναμενος
1.26/6–8a	δοκει θρῆσκηος
1.26/6–8b	θρῆσκηος δοκει
1.26/18b	αύτυου
1.26/20–22a	αλλ’ απατων
1.26/24–26b	καρδιαν αύτυου
2.1/10a	προσωποληψιαις
2.1/10a	προποληψιαις
2.1/10a	προσωληψιαις
2.1/10a	προσωπολυπτεις
2.1/10a	μπροσωποληψιαις
2.2/2a	αν
2.4/2–4a	ουκ εδιεκριθητε
2.4/8a	αύτυοις
2.5/10a	ουκ
2.8/28a	σαυτον
2.9/6a	προσωποληπτειτε

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Variant address	Reading
2.9/6a	προσωποληπειτε
2.9/6a	προσωληπτειτε
2.9/6a	προσωποληπται
2.9/6a	προσωποληπτειντε
2.11/6a	ειπας
2.17/22–24a	κατα αυτην
2.17/22–24a	καθ αυτην
2.18/2a	αλλα
2.18/36a	και εγω
2.19/26–30a	πιστευουσιν και φριττουσιν
2.22/10a	συνειρει
2.22/10a	συνειργει
2.25/8a	ραβ
3.1/2–12a	μη πολλοι διδασκαλοι γιγνεσθε αδελφοι μου
3.1/22a	ληψομεθα
3.2/24a	τελεος
3.4/32–42b	οπου εαν η ορμη του ευθυνοντος βουληται
3.4/32–42b	οπου δαν η ορμη του ευθυνοντος βουληται
3.4/32–42g	οπου εαν η ορμη του ευθυνοντος βουλεται
3.4/32–42g	οπου δαν η ορμη του ευθυνοντος βουλεται
3.5/8a	γλωττα
3.6/18–22a	η γλωττα καθισταται
3.8/4–6a	δε γλωτταν
3.8/22–24a	ιου θανατοφορου
3.10/28–30a	ουτως γιγνεσθαι
3.11/18–26j	το γλυκυ ναμμα και το πικρον
3.13/30–32a	εν πραοτητι
3.13/30–32a	εμ πραοτητι
3.15/16a	αλλ
4.4/26–40a	ος αν ουν βουληθη φιλος ειναι του κοσμου
4.4/26–40c	ος αν βουληθη φιλος ειναι του κοσμου
4.6/2–8a	μειζω δε διδωσιν χαριν
4.8/10a	εγγισει
4.13/36a	ενπορευσομεθα
5.4/50a	σαββαωθ
5.4/50a	σαββαοτ
5.4/52a	εισεληλυθαν

(cont.)

Variant address	Reading
5.7/46–50a	πρωιμον και οψιμον
5.7/46–50a	πρωιμον και οψιν
5.7/46–50c	οψιμον και πρωιμον
5.8/8a	στηρισατε
5.9/6–10a	αδελφοι κατα αλληλων
5.9/6–10c	κατα αλληλων αδελφοι
5.10/2–16a	υποδειγμα λαβετε αδελφοι της κακοπαθειας και της μακροθυμιας
5.10/2–16i	υποδειγμα αδελφοι της κακοπαθιας και της μακροθυμιας εχετε
5.10/2–16k	υποδειγμα λαβετε αδελφοι της κακοπαθειας και της μακροθυμιας εχετε
5.10/2–16l	υποδειγμα λαβετε αδελφοι μου της κακοπαθιας και της μακροθυμιας
5.11/26a	ειδατε
5.17/16a	προσευξατο
5.18/6a	προσευξατο
5.19/6a	αν
5.19/22–5.20/4a	και επιστρεψη τις αυτον γιγνωσκετω οτι

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